L & W STONE CORPORATION

THREE RIVERS STONE QUARRY

REVISED AMENDED PLAN OF OPERATIONS

Prepared for:
L & W Stone Corporation
P.O. Box 1224
Orland, CA 95963

December 2002

Prepared by:

Corporate Office
910 West Main Street, Suite 260
Boise, ID 83702

Engineering Office
409 W. Neider Street, Suite A
Coeur d'Alene, ID 83815

TABLE OF CONTENTS

(Table of Contents Continued) **Page**

(Table of Contents Continued) **Page**

(Table of Contents Continued) **Page**

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1
INTRODUCTION

1.1 LOCATION AND SURFACE OWNERSHIP

The Three Rivers Stone Quarry (Quarry) is operated by L&W Stone Corporation. The Quarry is an open pit stone quarry that mines a unique purple to light gray/brown siltstone rock or flagstone, which is used as a building material.

The Quarry area is located in Custer County, Idaho. Its general proximity is 19 miles southwest of the town of Challis, Idaho and 5 miles east of Clayton, Idaho as shown in Figure 1. Access to the site is provided via State Highway 75 with the mine entrance approximately 3,500 feet east of the East Fork Salmon River Road as shown in Figures 6 and 7.

The Revised Amended Plan of Operations submitted describes the existing operation, as well as the future activities that are anticipated to occur at the site. All activities associated with the Quarry are situated within portions of Sections 22 and 23, Township 11 North, Range 18 East, Boise Meridian.

The Quarry is located on unpatented mining claims controlled by L & W Stone Corporation. A complete listing of mining claims is presented in Table 1.

Table 1
MINING CLAIMS

Name of Claim	IMC Numbers
Three Rivers Stone MS No. 2	**175958**
Three Rivers Stone MS No. 1	**175959**
3-Rivers Stone No. 1	**173275**
3-Rivers Stone No. 3	**173276**
3-Rivers Stone No. 2	**173277**
Three Rivers No. 6	**184079**
Three Rivers No. 4	**174742**
Three Rivers No. 5	**174743**
LWP 4115 amended	**IMC 184766**
LWP 4116 amended	**IMC 184767**

LWP 4117 amended	**IMC 184768**
LWP 4118 amended	**IMC 184769**
LWP 4119 amended	**IMC 184770**
LWP 4120 amended	**IMC 184771**
LWP 4212 amended	**IMC 184772**
LWP 4213 amended	**IMC 184773**
LWP 4214 amended	**IMC 184774**
LWP 4215 amended	**IMC 184775**
LWP 4216 amended	**IMC 184776**
LWP 4219 amended	**IMC 184777**
LWP 4220 amended	**IMC 184778**
LWP 4312 amended	**IMC 184779**
LWP 4313 amended	**IMC 184780**
LWP 4314 amended	**IMC 184781**
LWP 4315 amended	**IMC 184782**
LWP 4316 amended	**IMC 184783**
LWP 4317 amended	**IMC 184784**
LWP 4318 amended	**IMC 184785**
LWP 4319 amended	**IMC 184786**
LW 5050	**IMC 184787**
LW 5051	**IMC 184788**
LW 5052 amended	**IMC 184789**
LW 5053 amended	**IMC 184790**
LW 5054	**IMC 184791**
LW 5148 amended	**IMC 184792**
LW 5149 amended	**IMC 184793**
LW 5150 amended	**IMC 184794**
LW 5151 amended	**IMC 184795**
LW 5152 amended	**IMC 184796**
LW 5153 amended	**IMC 184797**
LW 5154 amended	**IMC 184798**
LW 5155 amended	**IMC 184799**
LW 5156 amended	**IMC 184800**
LW 5246 amended	**IMC 184801**
LW 5247 amended	**IMC 184802**
LW 5248 amended	**IMC 184803**
LW 5249 amended	**IMC 184804**
LW 5250 amended	**IMC 184805**
LW 5251 amended	**IMC 184806**
LW 5252 amended	**IMC 184807**
LW 5253 amended	**IMC 184808**
LW 5254 amended	**IMC 184809**
LW 5255 amended	**IMC 184810**
LW 5256 amended	**IMC 184811**

LW 5346 amended	**IMC 184812**
LW 5347 amended	**IMC 184813**
LW 5348 amended	**IMC 184814**
LW 5349 amended	**IMC 184815**
LW 5350 amended	**IMC 184816**
LW 5351 amended	**IMC 184817**
LW 5352 amended	**IMC 184818**
LW 5353 amended	**IMC 184819**
LW 5354 amended	**IMC 184820**
LW 5355 amended	**IMC 184821**

1.2 OPERATOR INFORMATION

Operator Name:	L&W Stone Corp.
Contact Person:	Scott Laine
Tax Payer ID Number:	XXXXXXXX
Mailing address:	P.O. Box 1224 Orland, CA 95963
Phone Number:	(530) 865-5085

1.3 EXISTING CONDITIONS

The Revised Amended Plan of Operations describes the existing conditions and operations that are present at the site. Figure 1 shows the project location. Figure 2 is an aerial photo of the site. Figure 3 is a topographic map of the project area that shows the areas of regulatory concern. Figure 6 is a topographic map which shows the existing conditions and disturbances at the site.

1.3.1 General Site Description

The Three Rivers Stone Quarry (Quarry) is located on public lands near the confluence of the East Fork Salmon River and the main Salmon River. The project is administered by the Upper Columbia Salmon-Clearwater District of the Bureau of Land Management, Challis Field Office. The Quarry is operated by the L & W Stone Corporation. The open pit mining operation produces a unique purple to light gray/brown siltstone rock or flagstone, which is used as a building material for patios, walls, and other features.

The Bureau of Land Management (BLM) produced a Proposed Resource Management Plan (RMP) and Final Environmental Impact Statement that was completed in October, 1998. The

final RMP was approved in July 1999 for the area. The RMP is intended to identify resource condition objectives, land use allocations, and management actions and direction necessary to guide resource management on a long-term sustainable basis for the next 20 years.

Specifically, the project lies adjacent to the East Fork Salmon and Salmon Rivers that flow through the area just north of the Three Rivers Stone Quarry claim area. These rivers cut deeply into the bedrock of the area creating rugged topography through a narrow "V" shaped valley flanked by cliffs and rock outcroppings with very steep slopes. The relief between the valley floor and the mine is quite extensive. Elevations in the mine area vary from approximately 5300 feet at the Salmon River to 6000 feet at the highest elevation on the claim block.

The area tends to be dry, containing limited vegetation. In areas where snow is retained longer in the spring, vegetation is slightly more prominent than in other areas. However, these sites make up a small percentage of the total area. In addition, soil material is limited as the site is characteristically covered with large rock outcroppings. Some of the rock outcroppings consist of the same material that is mined as part of this plan.

1.3.2 Geology

The general bedrock geology of the region is a sequence of Paleozoic sedimentary rocks intruded by Cretaceous igneous rocks known as the Idaho batholiths. A large portion of the area is underlain by a series of Tertiary volcanic rocks called the Challis volcanics.

The sedimentary rocks of the Paleozoic era include interbedded units of quartzite, shale, limestone, tactite, argillite and conglomerate of varying thickness and sequences. Intrusive igneous rocks in the area include biotite, granodiorite, quartz monzonite and quartz monzonite porphyry. The extrusive volcanic units include: hornblende andesite lavas, tuffs, breccias, gray andesite lavas, hypersthene-augite lavas, pink andesite lava flows and upper ash flow tuffs, the primary unit being the Challis volcanics.

The project area is in a geological region called the Black Shale Terrane, which consists of Permian to Cambrian sedimentary rocks. The formations that outcrop in the project area are the

Kinnikinic quartzite of middle Ordovician age, which is underlain by the Ramshorn slate of lower Ordovician age. It is the Ramshorn slate that is being mined by L & W Stone. The rocks of the Ramshorn slate are generally fine grained, argillaceous or silty, thinly banded and laminated, and dark colored on fresh fracture. They are generally found in distinctive shades of gray, green, or purplish gray. The original thickness of the Ramshorn Slate is difficult to establish because of internal folding, lack of definitive key horizons, pervasive cleavage, and the faulted top, but it is estimated to have been 2,400 feet. The Kinnikinic quartzite consists of intercalated dolomitic limestone, massive light colored quartzite with lenses of dolomite, dolomitic shale, and some conglomerate. Units of gabbro, a Jurassic-age intrusive rock, are also exposed along the rivers (Geology and Mineral Resource Assessment of the Challis 1° x 2° Quadrangle, Idaho).

There is a thrust fault on the far eastern side of the project area. The project area is on the lower plate of the fault, which lies in a north-south direction. Surficial deposits include talus, landslides and alluvium. Alluvium is restricted to the narrow valley bottoms (Geology and Mineral Resource Assessment of the Challis 1° x 2° Quadrangle, Idaho).

The generally steep, incised character of the principal drainages in the area limits human access, and influences wildlife and livestock utilization patterns.

1.3.3 Mine Site Geology

The general relief of the mine area varies from relatively flat to rolling hills, with relatively steep slopes. Most of the rocks in the active mine area are light gray with thin layers of green argillite. A fault runs through both Pits 1 and 2, which has caused some distortion of the formation, making them appear to be a mudstone. Both active mine sites, as well as the proposed exploration area, are covered in a thin layer of overburden of less than 6 inches.

1.3.4 Seismic Activity

The Quarry is located in a relatively active seismic region. The Idaho Geological Survey website (www.idahogeology.org) has compiled historical data (through 1989) with regard to earthquake

sizes and frequency in the state. They have also identified the eighteen most significant earthquakes that have occurred in Idaho. While earthquakes have occurred throughout Idaho, the largest occurrence of seismic activity has generally been focused around the Challis area.

Data on earthquake epicenter locations within a 93-mile radius of the town of Clayton generated for the Thompson Creek project in 1980 was reviewed. That data is summarized below:

Richter Magnitude	Number of Earthquakes
4.0 to <5.0	51
5.0 to <6.0	3
6.0 to <7.0	2

The largest earthquake occurred about 55 miles northwest of Clayton in 1944, with a magnitude of 6.1. The next largest occurred in 1963, and had a magnitude of 5.9. The majority of earthquake epicenters in the region were located in the vicinity of the small community of Sunbeam. The maximum credible magnitude for a locally centered earthquake was estimated at 5.5, according to the study (www.idahogeology.org).

The largest earthquakes to cause damage in Idaho occurred outside the Challis area, but were close enough to cause damage in the area. The Borah earthquake, which occurred in 1983, had a magnitude of 7.3 and a maximum MM intensity IX assigned on the basis of surface faulting. It was the largest earthquake recorded in Idaho, both in terms of magnitude and damage. This earthquake caused surface faulting in a 34 kilometer long, northwest trending zone, fresh scarps and ground breakage on the southwest slope of the Lost River Range, and created rockfalls and landslides on the steep slopes of the Lost River Range (www.idahogeology.org).

The 1959 Hebgen Lake earthquake, which was centered on the western border of Wyoming, had a magnitude of 7.1 and an intensity of VII at Henry's Lake, Big Springs, and Island Park, ID. An intensity VI earthquake occurred near Clayton, ID in 1963 (www.idahogeology.org/ and www.neic.usgs.gov/).

Potential seismic activity is a key consideration in the design of mine facilities. Waste rock dumps will be regraded to an overall 2:1 slope and the pit walls will have a 45 degree angle for long-term stability and to control surface runoff. Haul roads will be inspected on an ongoing daily basis and after any seismic events are detected or reported.

1.3.5 Meteorology

The weather in the project area is characterized by long, harsh, snowy winters and short, hot, dry summers. The Central Idaho Region generally has westerly airflow. A majority of the precipitation is received in the form of snow between the middle of October and middle of May. These precipitation events typically have a long duration. Thunderstorms also occur in the project area in the summer. These events are high intensity, short duration events lasting one hour or less (www.wrcc.dri.edu/cgi-bin/).

Temperature extremes range from minus 50°F in the winter to 95°F in the summer. Winter weather is typically characterized by cold days and nights, and cloudy, stormy periods, which can extend for several days. Summer weather is usually clear, with clouds forming in the late afternoon and evening. Freezing temperatures occur throughout the year with no definite frost-free periods. Wind speeds typically range from 5 to 20 miles per hour.

For the period between 1931 and 1996, the mean annual precipitation in the Challis area was 7.40 inches, with 15.7 inches being the mean snowfall amount. The maximum annual rainfall during this period was 11.98 inches in 1995; the least annual rainfall was 2.62 inches in 1935 (www.wrcc.dri.edu/cgi-bin/). The majority of precipitation occurs as snow, with an average April 1 snow pack depth of 67 inches at nearby Mill Creek Summit. The average annual evaporation is approximately 41 inches.

1.3.6 Air Quality

Ambient air quality has not been measured or monitored at the project site. There are two sources of air pollutants at this site: gasoline and diesel-powered vehicles and equipment and

dust. The source of dust particulates results from moving vehicles on the access and haul roads, mining activities, mine waste disposal, and natural wind erosion from native soils.

The operator's observations of air quality during the operating history of the stone quarry is that it is generally good. In addition, BLM considers the air quality in the region to be excellent with short term, occasional periods of degradation (Proposed Resource Management Plan and Final Environmental Impact Statement, 1998). Dust suppression methods will be utilized whenever project activities create nuisance quantities of airborne dust. Dust suppression methods will consist of wetting down road surfaces and work areas using a 5,000-gallon water truck. Nuisance quantities of dust will be characterized by visible clouds of dust rising and blowing out of the work/project area. Chapter 2.7, Water and Dust Management Plan, provides additional text concerning dust suppression.

1.3.7 Hydrological Considerations

Typically, floods occur in this type of hydrological environment when the rainfall intensity or snowmelt rate is higher than soil infiltration rate. This results in the water absorption capacity of the watershed to be exceeded by the precipitation amount. The typical conditions that result in floods occurring in the Salmon River watershed are: 1) snowmelt; 2) rain-on-snow or snowmelt followed by rain; and 3) cloudbursts. Soil characteristics are discussed in Chapter 1.3.8, Soils.

Stream flows for the Salmon River and the East Fork Salmon River and their tributaries exhibit the typical pattern of mountain streams. Highest flows occur in the late spring and early summer with peak flows occurring in June for both the Salmon River and the East Fork Salmon River as winter snow pack melts in addition to spring rainfall. Flows then decrease until a regular base flow is established during fall and winter months.

The maximum mean monthly stream flows for the Salmon River, near Challis, Idaho, between 1928 and 1972, is 4,968 cubic feet per second (cfs) in June; the minimum mean monthly stream flow is 616 cfs in January. Low stream flow rates continue from August (982 cfs) through March (626 cfs). The contributing drainage area for this data is 1,800 square miles. The

maximum mean monthly stream flows for the East Fork Salmon River near Clayton, Idaho, between 1928 and 1981, is 870 cfs in June; the minimum mean monthly stream flow is 79.0 cfs in January. The contributing drainage area for this data is 532 square miles (www.waterdata.usgs.gov/id/nwis/).

The pH in the Salmon River is slightly alkaline, generally ranging from 7.2 to 7.9. Hardness, described as milligrams per liter as calcium carbonate (mg/l as $CaCO_3$), ranged from 33 to 73. Nitrogen, as NO_2 and NO_3 dissolved as mg/l of N, ranged from 0.000 in early summer to 0.110 in October, with the highest value observed in May (0.130). Phosphate levels, described as mg/l dissolved as PO_4, ranged from 0.000 to 0.120, with most recorded levels at 0.030 to 0.060. These values were taken from a data sample during the years 1965 to 1975 (www.waterdata.usgs.gov/id/nwis/).

No known perennial streams or springs exist in the primary Three Rivers Quarry Project area as evidenced by the lack of riparian vegetation or scour marks. The East Fork Salmon River is 320 feet from the south edge of Pit 1. The Salmon River is 800 feet from the north end of Pit 1 and 58 feet from the entrance to the staging area. Two ephemeral drainages in the project area can be seen on Figure 3, Areas of Regulatory Concern. One of the drainages is located along the north side of the project area, while the other is located along the south side of the project area. Sediment erosion from intermittent rain events will be mitigated with the use of Best Management Practices (BMPs), such as silt fences and straw bales which will be employed when sediment from erosion could enter a sensitive area and/or a water body or a drainage system.

There has been no evidence of groundwater in the area of disturbance. The estimated groundwater elevation in the project area is 5,300 feet to 5,360 feet, based on the nearby elevation of the E. Fork Salmon River. The maximum depth of Pit 1 is projected to be 5,425 feet, well above the estimated groundwater level. There is currently no well on the site in order to accurately determine the depth to groundwater. The proposed location for a well is in the administration area of the project site within 150 feet of these coordinates: N44°16.388 and W114°18.807, dependent upon which location is determined to produce the best water supply.

1.3.8 Soils

Three types of soils predominate in the project area. These are the Kehar series, the Millhi series, and the Venum series. The Venum series, a very cobbly loam, are found in the western portion of the project area. This soil series consists of well drained, slowly permeable soils that formed in colluvium from quartzite and other mixed material on mountains and foothills. In general, the pH increases with depth with a pH of 7.0 at a depth of 2 to 5 inches. However, the pH at the surface, 0 to 2 inches, is 7.2 (National Cooperative Soil Survey and www.statlab.iastate.edu/soils).

The Kehar series, a very gravelly loam, is found in the eastern portion of the project area. This soil series consists of well drained, slowly permeable soils on mountains and hills that formed in colluvium from tuff and rhyolite. The pH increases with depth. The pH is 7.2 at a depth of 0 to 4 inches (National Cooperative Soil Survey and www.statlab.iastate.edu/soils).

The Millhi series, a gravelly silt loam, covers a small area in the south central part of the project area. This soil series consists of moderately well drained, very slowly permeable soils formed in lacustrine sediments with a thin mantle of slope alluvium. The pH is 8.0 from 0 to 9 inches deep (National Cooperative Soil Survey and www.statlab.iastate.edu/soils).

The soil survey did not include depths of each of the soil types in this area (National Cooperative Soil Survey and www.statlab.iastate.edu/soils). However, observation shows that the depth of topsoil is generally less than 6 inches deep throughout the project area especially on steeper slopes and rocky terrain where topsoil may not be present at all. The areas to be disturbed by mining activities contain limited amounts of topsoil suitable for use in reclamation.

Where the potential for erosion is likely, or where erosion is noted to have occurred, or is occurring, mitigation measures will be utilized. These measures may include silt fences, water bars, straw bales, and diversion ditches described in Chapter 2.7, Water and Dust Management Plan.

A major goal of the "Conceptual Reclamation Plan" presented later in this document is to minimize wind and water (weather) erosion after the mining operation has stopped, and to reclaim the majority of the land to an end-use similar to previous grazing use (post-mining land use) that existed prior to development of the quarry. This will require topsoil removal (where applicable), segregation and storing for future use in reclamation, as part of the ongoing mine plan. Stored topsoil will also need to be stabilized to limit erosion potential.

Concurrent reclamation will also be performed to provide soil stability during operations, such as on development rock storage area slopes. These procedures are discussed in more detail in the Mine Plan and the Conceptual Reclamation Plan.

1.3.9 Vegetation, Wildlife and Grazing

Upland vegetation in the project area is predominantly Wyoming big sagebrush and mountain big sagebrush. Grasses include Bluebunch wheatgrass, Sandberg bluegrass, Douglass rabbitbush, and needle-and-thread grass. These vegetation types are important to mule deer browsing and livestock grazing.

No riparian vegetation types are located in the Project area. Earlier sections on surface water hydrology and water quality note that surface water resources in the Project area are absent, with the exception of the ephemeral drainages at the north and south edges of the project area.

Wildlife is relatively diverse in the project area. Big game species such as mule deer, antelope, and elk are present in the area. Other species present include coyotes, bobcat, red fox, jackrabbits, and small rodents. Chukar, partridge, blue grouse, sage grouse, and ruffed grouse are game bird species present in the area. Golden eagle and prairie falcon typically inhabit areas in closer proximity to nearby riparian habitat.

No special status plant species are known to inhabit the site. The Resource Management Plan (Challis Field Office, Bureau of Land Management, 1999) also addresses noxious weeds and management priorities which include: 1) preventive actions to minimize the need for control; 2)

use of effective non-chemical methods where feasible; and 3) use of herbicides where necessary after first employing preventive and non-chemical methods of control. Refer to Chapter 2.14 for a description of the weed management program.

The Mine Plan and Conceptual Reclamation Plan described later in this document describes management practices to be employed by L & W Stone at the Three Rivers operation, such that potential adverse effects associated with mining disturbance do not pose a threat to local wildlife and livestock.

1.3.10 Visual Resources

Visual resources of the Challis Field Office were inventoried and classified in accordance with approved BLM procedures, as part of the Challis Resource Management Plan (1999). The process considered scenic quality and visual and public sensitivity. More specifically, class designations were derived from an overlay technique, which combined the maps of scenic quality, sensitivity levels and distance zones. These areas were assigned one of five visual management classes:

- Class I – Preservation
- Class II – Retention
- Class III – Partial Retention
- Class IV – Modification
- Class V – Rehabilitation or Enhancement

The Three Rivers Project site is located in a Class II Retention visual management area. The objective of Class II visual management areas is to design alterations to the landscape in a manner that retains the character of the landscape (Challis Resource Management Plan, 1999).

The mine site is located within the boundaries of the Upper Salmon River Special Recreation Management Area. It is adjacent to the Salmon River Scenic Byway, the proposed Wild Horse Backcountry Byway, and the Salmon and East Fork Salmon Rivers, which are classified as "Eligible; Suitability finding deferred; tentative classification: recreational". Mitigation

activities related to control of dust through watering, optimizing mine waste dumpsite locations, concurrent reclamation and road alignments, so as to limit or reduce visual impacts, are being considered as part of the Mine Plan being developed for the project. However, topographic features and steep terrain minimize viable alternatives for design of the mine facilities.

The Conceptual Reclamation Plan will consider the high visual and recreational quality of the areas in and around the project area in all aspects of reclamation. The Conceptual Reclamation Plan will also consider revegetation programs aimed at restoring naturally occurring (endemic) sagebrush and grass-types, which will further enhance the reclamation goals of long-term grazing and wildlife use at the site.

1.3.11 Areas of Critical Environmental Concern

The Federal Land Policy and Management Act (FLPMA) provides for Areas of Critical Environmental Concern (ACEC) designations and establishes national policy for protection of these public lands. The purpose of an ACEC designation is to "highlight" values, resources, or conditions that need management and/or protection. While an ACEC may emphasize one or more unique resources, other existing multiple use management can continue within an ACEC as long as the uses do not impair the values for which the ACEC was designated. A Research Natural Area (RNA) is "an area in as near a natural condition as possible, which exemplifies typical or unique vegetation and associated biotic, soil, geologic, and aquatic features. The area is set aside to preserve a representative sample of an ecological community primarily for scientific and educational purposes..." These areas are shown on Figure 3, Areas of Regulatory Concern (Record of Decision and Resource Management Plan, July 1999). The RNA designation was made to allow study for some natural, pristine, or unique characteristics of the area and involves about 78 acres. The current condition is rated excellent; the trend is stable.

A small portion of the Three Rivers Project area encroaches into The East Fork Salmon River Bench ACEC and Research Natural Area (RNA). BLM officials, during site visits, set the current haul road as the limit of entry into the ACEC without further analysis. Figure 6 shows the limited existing surface disturbance within the estimated boundary of the ACEC. This

encroachment was negotiated during past field visits with BLM personnel with the understanding and commitment that no future activities would occur within the area.

1.4 EXISTING OPERATIONS

The existing operations encompass approximately 47 acres of surface disturbance that includes the following facilities and activities:

- Staging area
- Administrative office (trailer) and parking area
- Access roads
- Pit 1
- Pit 2
- Development rock storage sites
- Fuel storage areas
- Explosive storage areas

Figure 6 shows the existing facilities that are actively being mined at the site and Table 2 shows the estimated acres of land which are currently disturbed per BLM (BLM letter to L&W Stone, dated October 23, 2002).

Table 2
EXISTING DISTURBANCE

Disturbance Type	Acres
Pit 1/Development Rock Pile	25.49
Pit 2/Development Rock Pile	8.14
Explosive Area 1	0.52
Explosive Area 2	0.56
Access Roads	3.88
Admin/Staging Area	7.36
Ditch/Berm	1.05
Waste Rock on Road	0.40
Power Line Road	0.25
Total Disturbance	**47.65**

1.4.1 Staging Area/Administrative Office and Parking Area

This area is the general administrative area for the mining operation and consists of the administrative office (trailer), general supplies storage, and crated flagstone for shipping. All personnel entering the mine site must check in at this location.

1.4.2 Access Roads

The main access road extends from the Admin/Staging Area up to the west side of Pit 1 and ranges from 20 to 30 feet wide. The access road to Pit 2 extends from the main access road and is located in a small saddle. Access roads are generally 30 feet wide with an outside berm constructed for safety purposes where required. A typical cross section of a road is shown in Figure 5.

Several small native surface two-track roads exist on the property and are used to access mining claims for exploration activities. No improvements to the exploration roads have been made during mine operations.

1.4.3 Mine Pits

There are two pits presently being mined at the site. Pit 1 is located approximately 1500 feet to the southwest of the Admin/Staging Area. The present pit is approximately 2000 feet long, 600 feet wide and 100 feet deep. The pit is shaped like a slot cut with highwalls on both sides and open at the ends of the pit.

The second pit (Pit 2) is located approximately 2000 feet south of the Admin/Staging Area. Pit 2 dimensions are approximately 1000 feet long and 400 feet wide. The top of the hill contains mineable material and consequently does not have a highwall associated with the pit.

1.4.4 Development Rock Storage

Development rock is overburden, interburden, and flagstone (typically sedimentary rock), associated with the mining operation, which does not meet mine material specifications and must be discarded to access and mine the defined economic rock zones. Development rock is placed

and pushed to the north end of Pit 1 and along the south and southwest edges of Pit 2 (Figure 6). The development rock material is pushed down dip as the pits are deepened.

1.4.5 Fuel and Lubricant Storage

L&W Stone stores various fuels and lubricants to support the mobile equipment.
Currently, fuel is stored on-site in:

- One 500-gallon diesel fuel tank at Pit 2, in a containment area lined with 10-mil plastic,
- One 500-gallon diesel tank in the lower yard of the Administration area in a containment area lined with 10-mil plastic, and in
- One 3000-gallon tank, stored with the bulk lubricants listed below in Pit 1.
- A 250-gallon gasoline tank is stored with the bulk lubricants listed below in Pit 1.

Bulk lubricants are stored in Pit 1 and consist of the following:

- One 250-gallon tote of motor oil,
- One 250-gallon tote of hydraulic oil,
- One 250-gallon antifreeze tote
- Two 55-gallon rock drill oil drums, and
- One 250-gallon engine oil tote.

The bulk lubricants listed above, plus the 250-gallon gasoline tote and the 3,000-gallon diesel tank, are stored within a containment area which is located in the Pit 1 area. The containment area is designed to hold 3,000 gallons, the quantity stored within the largest container, the diesel tank described above, plus the 2 inches of precipitation expected from a 10-year, 24-hour storm event.

In addition to the above, there are three used oil containers. A 250-gallon used oil tote is stored at the Pit 1 fuel loading area. Another 250-gallon used oil tote, plus a 1,000-gallon tank of used oil are stored in the lower yard of the Administration area.

All current fuel and lubricant storage locations can be seen in Figure 6, Existing Project.

The fuel and lubricant storage areas comply with the applicable regulations. Spill cleanup kits are stored in the general vicinity of the storage areas. Personnel clean up spills immediately, after taking all necessary precautions.

Signs are posted prohibiting smoking and open flames wherever a fire or explosion hazard exists. Waste materials are not accumulated in quantities that would create a fire hazard. The used oil totes are removed by the same company that services the equipment where it is used or appropriately disposed in accordance with applicable laws and regulations. Rags and other materials containing flammable or combustible liquids are placed in covered metal containers until they are properly disposed (30CFR56.4101). Flammable liquids are not used for cleaning and are not used near heat or ignition sources that could raise the temperature of the liquid above the flashpoint. Dry vegetation within a 25-foot perimeter around flammable and combustible liquid storage areas is removed when necessary.

Storage tanks for flammable or combustible liquids are built to withstand the pressures and stresses of holding the liquid. The tank composition is compatible with the liquid that is stored. Tanks are maintained and handled in a manner that will minimize the potential for punctures and leaks.

Containment is provided for the entire capacity of the largest tank in the containment area, the diesel fuel tank. Aboveground tanks are vented to prevent development of pressure or vacuum. Both the tank and the vents are isolated from ignition sources. Aboveground storage tanks are securely mounted on firm foundations.

Tanks are equipped with flexible hoses for draining the contents. The gravity-fed hosing is assembled and maintained in a manner to minimize the potential for punctures and leaks. The hosing and associated fittings are capable of the pressures and stresses of carrying the flammable liquid and are compatible with the contained liquid.

1.4.6 Explosives Storage Area

Drilling and blasting is a key element of the mining process. Storage and usage of explosives complies with Mine Safety and Health Administration (MSHA) regulations. The maximum quantity of pre-mixed ammonium nitrate fuel oil (ANFO) that is, and will be stored at one time, is 15,000 pounds. Currently, 7,500 pounds of ANFO are delivered twice per month which may vary depending on actual production requirements. The ANFO is bagged and in a pellet form commonly called "prill".

Two explosive storage areas are required to safely store explosives used at the project site and are located near Pit 2. The storage areas are constructed of material consistent with proper storage and handling explosives as required by MSHA regulations. The ammonium nitrate fuel oil (ANFO) is stored on the west side of Pit 2 and the explosives, such as caps, detonator cords, primers, and dynamite are stored on the south side of Pit 2.

The explosive storage units are located so that an explosion from either of the storage facilities is unlikely to create a hazard to occupants in the mine buildings or to employees in the mine area (30CFR56.6131). "U. S. Department of Transportation" placards or other appropriate warning signs are posted as required by law. These placards indicate the contents and are visible from each approach to identify the explosive storage areas. The placards/warning signs are located in a manner that a bullet passing through any of the signs will not strike the magazine (30CFR56.6132).

The explosive storage areas exceed the setback requirements from state and county roads and are located a safe distance away from power lines, so that downed power lines would not contact the storage facility. The explosive storage areas are set back from haulage roads by more than the required distance of 50 feet. A 25-foot area around explosive storage facilities is kept cleared of rubbish, brush, dry grass and trees that are dead or less than 10 feet tall. A berm is constructed around the explosive storage area to keep vehicular traffic away. Combustible materials are not stored or accumulated within 50 feet of explosive storage areas. Drainage from combustible liquid storage areas is directed away from the explosives storage areas (30CFR56.6101). Signs

are posted on the storage units that are visible from each approach and indicate the contents of the storage units (30CFR56.6132).

Detonators and high explosives are stored in one of the two magazines required for safe storage of blasting materials. Blasting agents are also separated from explosives, safety fuses, and detonating cords to prevent contamination (30CFR56.6100). The explosive material is stored in a manner that facilitates the usage of older inventory first. Workers are trained to use older inventory before newer inventory. Explosives material is stored in a manner that enables labels to be easily read. Stacks of explosive material do not exceed 8 feet high and are maintained to be stable (30CFR 56.6102).

Packaged blasting agents are stored in a magazine that is weather-resistant and kept locked when unattended. Magazines are constructed and maintained to be structurally sound, bullet resistant, and ventilated to control dampness and excessive heating inside the magazine. Magazines are made of ¼" plated steel. The interior is made of a nonsparking material. Magazines are maintained in a clean and dry condition. The interior of the magazines are equipped with light sources that do not create a fire or explosion hazard. Electrical switches and outlets are located on the exterior of the magazine. Only explosive material and nonsparking equipment used in the operation of the magazine are stored in the magazines. Metal magazines are equipped with electrical bonding connections, such as by welding or riveting, between all conductive portions so that the entire structure is at the same electrical potential (30CFR 56.6132).

1.4.7 Blasting Procedures

Blasting is accomplished by drilling 10 foot by 10 foot spaced patterns of 4 inch drill holes, approximately 12 feet deep. There are 50 holes per pattern when blasting ore and 100 to 150 holes per pattern when blasting in waste material. Six pounds of explosive are placed in the 4 inch holes when blasting in flagstone and 27 pounds per hole when blasting in waste material.

ANFO is used as the primary explosive. However, stick dynamite is also used when conditions warrant. Down-hole boosters (typically 0.5 lbs.) are used in conjunction with the non-electric

blasting system. Powder factors and types of explosives used vary throughout the pit. No electric detonation is used in blasting systems. Only authorized personnel are allowed to enter the vicinity of the blast site. A warning signal is broadcast over the area prior to blasting. Employees and visitors are not allowed to bring cigarettes, lighters, matches, and other highly flammable objects to the vicinity of blasting operations. Currently, the mine blasts a maximum of 3 times per week.

The following steps are taken before blasting is conducted:

1. The blasting area is secured, signed, and barricaded.
2. The area is inspected prior to detonation.
3. The mine operation is cleared prior to detonation.
4. A warning signal is sounded.
5. The shot is inspected.
6. When all is clear, and the shot has passed inspection criteria, then blasting will occur.
7. When blasting is complete, an “all clear” signal is sounded.

CHAPTER 2
DESCRIPTION OF PROPOSED OPERATIONS

This plan is being submitted to update and describe the mining activities associated with the property to continue mining flagstone. The plan outlines the pit extensions, development rock storage areas and other features necessary to support the mining operations.

2.1 APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

The following environmental laws and regulations apply to the Three Rivers Stone Quarry Project:

- General Mining Law of 1872
- The Clean Air Act of 1963 (as amended, 1977)
- The Federal Land Use Policy and Management Act (43 U.S.C. 1701 et seq.)
- National Environmental Policy Act of 1969
- Clean Water Act of 1977
- Materials Act of 1947 (Common Variety Minerals)
- Executive Order 11988 (Floodplain Protection)
- Executive Order 11989 (Off-road Vehicle Use)
- Idaho Surface Mining Act (Reclamation Plan)
- Idaho Joint Review Process for Mining Operations
- Endangered Species Act of 1973
- State Historical Preservation Act of 1970
- 43CFR Subtitle B, Chapter 2, part 3809

Appropriate applications, reviews and approvals will be filed and obtained by the operator, L&W Stone Corporation.

2.2 PLANNED ACTIVITIES

The locatable flagstone resource crops out near the top of two rocky knobs, that trend in an east/west direction. Mining at the Quarry is proposed on these rocky knobs in two pit areas identified as Pit 1 and Pit 2 (Figure 7).

The rock is currently drilled with a 4-inch diameter drill and blasted with explosives to loosen the flagstone and development rock (uneconomic reject material). A 6 3/4-inch diameter drill may also be used in the future operations. The flagstone rock is then separated and placed by hand on pallets. The pallets are loaded onto flatbed trucks and transported from the pits to a storage/loading area located near the Admin/Staging Area.

The rock that must be moved to reach the valuable flagstone is termed development rock and it is stored onsite in the development rock storage areas, which are essentially reject material storage areas. Currently, these areas are located on the slopes of the rocky knobs, adjacent to Pit 1 and Pit 2.

The equipment used to mine is consistent with other similar mining operations. The proposed equipment inventory for this operation includes, but is not limited to, the following:

- 2-front end loaders,
- 5-30-ton haul trucks,
- 4-220 hydraulic excavators,
- 2 5-yard dump trucks
- 1-5,000 gallon water truck,
- 2-ten-wheel flat beds,
- 2-drills,
- 1-track-dozer,
- 1-bulk truck for loading ammonium nitrate,
- 1-fuel truck,
- 1-1ube truck,
- 1-grader,
- 4-light vehicles,
- 2-fork lifts and other equipment.

The equipment will vary and is dependent on the quantity and type of material to be moved.

Mining operations occur 7 days per week, 52 weeks per year. Production rates will vary dependent on product demand, mine plans and weather conditions. Anticipated production rates will likely fall in the XX tons of flagstone annually.

Table 3 provides a breakdown of the total proposed acreage of disturbance which includes the existing surface disturbance and the roaming 15 acres of exploration activity. The total proposed disturbance for the life of the Project as described in this revised APOO is 165.9 acres as shown in the table below and in Figure 7. Annual disturbance up-dates and projected new disturbance for the next year will be completed to ensure compliance and bonding estimates are consistent with plan details.

Table 3
PROPOSED DISTURBANCE

Disturbance Type	Acres
Pit 1	40.9
P-1 Development Rock Storage	15.7
Pit 2	16.7
P-2 Development Rock Storage	54.9
Explosive Area 1	0.6
Explosive Area 2	0.6
Access Roads	10.1
Admin/Staging Area	9.4
Topsoil Stockpile	1.9
Fuel and Oil Storage	0.1
Exploration Activity	15.0
Total Disturbance	**165.9**

Note: Disturbance areas provided in the table above include a 10 foot buffer zone around each of the areas, including access roads.

2.3 PIT AREAS

Based on the geologic information available for both Pit 1 and 2, a mine plan was developed to project pit limits to extract the flagstone. Figure 7 shows the pit limit planned for the two pits. This revised Amended Plan of Operations is limited to the area of disturbance shown on Figure 7 and to a total planned disturbance of 165.9 acres. If there is more potential for mining, and more

than 165.9 acres would be disturbed at any one time, or an area that is not designated for planned development would be disturbed, then another amendment to the Plan of Operations will be done prior to disturbing additional acreage.

2.3.1 Pit 1

Pit 1 will require a layback of the existing eastern highwall (hanging wall) to allow access to the rock zones at depth. The western highwall (footwall) will continue on the same approximate dip to the bottom of the pit. Berms and trenches will be constructed at the top of the northwestern wall to prevent rock from falling onto the highway below. The pit bottom is currently designed to an elevation of approximately 5425 feet MSL or roughly 500 feet deep. Mining from Pit 1 will produce approximately XX cubic yards of flagstone per year. Figure 8 is a cross-section of Pit 1 from A to A' and shows the mining sequence in 50 foot mining intervals. Figure 9 is a cross-section of Pit 1 from B to B' showing the same mining sequence.

The eastern highwall (hanging wall) is designed with an overall 45-degree angle for stability purposes. A 10-foot safety bench at every 50 foot elevation change is included in the design. No safety benches are required on the western side as the pit wall follows the natural dip of the rock beds.

Development rock and flagstone will be removed as part of the mining process. Pit 1 development rock is expected to be approximately 6.4 million cubic yards of material. The P-1 Development Rock Storage Area (DRS) will contain 390,000 cubic yards of material. The remaining pit material will be hauled to P-2 DRS.

There will be approximately XX cubic yards of flagstone contained within the Pit 1 mine plan. However, not all the material is recoverable or meets specifications. The material that is rejected will be placed into one of the two development rock storage areas.

Table 4 provides the production numbers for the project. Pit expansion is likely for Pit 1 and is discussed in more detail in the Exploration Section. The pit could extend easterly at the current

design depth. Confirmation drilling will be necessary to determine the direction of pit expansion.

Protection of the ACEC will be accomplished by limiting entry into the area and use of BMPs to manage water and sedimentation. Currently, the haul road located on the southern end of Pit 1 is the limiting boundary for mining activities. The mine design shown on Figure 7 outlines the pit limits with the restriction of mining controlled by this current boundary. In this manner, protection of the ACEC is provided along with visual impacts associated with the mine from the southerly direction.

A buffer zone will be established from the current level that will limit incidental waste material that would be located adjacent to the pit limit. The pit design will step in from this point retaining the current topography through the buffer zone. Known mineralization extends beyond this pit limit, but will not be mined to provide this protection. This technique was used successfully on the western boundary of Pit 1.

Use of the haul road will continue to remove waste and access the pit until such time that the pit design limits use of this road. The current haul road contains an outer berm that controls run-off into the ACEC area. Drainage from the ditches/berms located along this section of haul road will pass through straw bales and/or sediment control fencing to minimize sediment loading to the ACEC area.

Future access to the pit will be via a series of pit ramps that will be developed as the pit progresses. The ramps will be developed to allow safe and efficient access to overburden stripping and flagstone removal. Figure 7 outlines the general location of the pit ramps. Generally, an upper ramp will be required to provide access to the upper zones for stripping and an additional ramp will be required to access the P-1 Development Rock Storage site. This ramp will be the primary route to move the existing development rock to the new location. Several intermediate ramps will be required as pit development advances as well. A lower ramp will be

required to access the bottom levels of Pit 1 to allow development rock and flagstone to be removed from the pit.

2.3.2 Pit 2

Pit 2 initially removes the top of the rocky knob and ultimately will develop a pit highwall on the northeast side of the pit. Topography is favorable for this pit and, as is shown on Figure 7, the pit "daylights" on the western side. Pit 2 is mined to approximately the 5900 elevation. Pit 2 will produce approximately XX cubic yards per year. Figure 10 is a cross-section of Pit 2 from C to C' and shows the mining sequence for Years 1-5, 10, 20, 30, and 36.

The pit walls will have an overall slope of approximately 45 degrees. Due to the limited highwall height and the fact that the highwall slope has not been altered and is therefore at the pre-mining angle, a safety bench was not needed for this pit. Additionally, a safety bench at this location would create more visual disturbance. The highwall will be approximately 100 feet at its highest point and will be limited to a small area. The remaining highwall gradually decreases in height until it blends with natural topography.

Initially, there appears to be two separate flagstone beds that extend beyond the present pit. However, it is unknown if the two beds form into one unit. This would significantly increase the volume of flagstone and reduce the volume of development rock anticipated.

Development rock and flagstone will be removed as part of the mining process. Pit 2 development rock will range between 850,000-950,000 cubic yards of material.

There will be approximately XX cubic yards of flagstone contained within the Pit 2 mine plan. However, some of the material is not recoverable or does not meet specifications. This material will be placed into the P-2 Development Rock Storage Area.

The extent of strike length of this unit is unknown and is expected to project in both a north and south direction. If drilling confirms this extension, the pit would be developed to the south and

extend beyond the presently anticipated pit limit (and possibly deepened). Ore estimates are subjective and are based on currently available information. As more information is obtained with further drilling and exploration, more accurate ore estimates will also be obtained. Another amendment to this Plan of Operations would be done if ore will be mined outside the scope of this revised Amended Plan of Operations.

2.4 DEVELOPMENT ROCK STORAGE AREAS

Existing development rock storage areas are constructed as mining progresses and are located adjacent to each of the pits. However, as mining extends beyond the present pit limits, additional storage capacity will be required. Table 4 provides an estimate of volume for the development rock storage areas.

2.4.1 P-1 Development Rock Storage Area (P-1 DRS)

The plan proposes that the existing development rock pile located at the north end of Pit 1 be relocated slightly to the northeast. As mining progresses deeper, development rock would be moved to the proposed location, P-1 Development Rock Storage Area (P-1, DRS). The proposed location has a more gradual slope and will have less potential visual impacts than the approved existing location. Development rock can be easily blended into the existing topography in the proposed location. In addition, the proposed area is designed to provide concurrent reclamation which further mitigates the visual impacts. By relocating the development rock storage area, all development rock would be removed from the existing approved location and relocated to the P-1 Development Rock Storage Area. Each of these factors is an improvement over the currently approved location. The proposal is intended to improve site conditions and minimize potential impacts from the project. However, if the P-1 DRS is not approved, continued use of the currently approved location will be required.

The capacity of P-1 DRS is approximately 390,000 cubic yards, which is less than the quantity of rock material estimated from Pit 1. In addition, approximately 25 to 40 percent of flagstone in the pit will not be recoverable and will be placed with the development rock for disposal.

Therefore, any additional material generated internally or from a pit expansion will be hauled to P-2 DRS Areas. The mine sequence will determine when material is hauled to P-2 DRS. Figure 11 is a cross-section of P-1 DRS from D to D'.

Idaho BMP guidelines for mines will be practiced. Straw bales certified to be weed-free and/or silt fences will be placed to trap any soil that does erode. A diversion ditch will route stormwater away from areas of disturbance. Figure 15, Water Management Plan Map, shows the approximate location of diversion ditches required. Concurrent reclamation will be more fully described in the detailed reclamation plan and cost estimate.

2.4.2 P-2 Development Rock Storage Area (P-2 DRS)

The capacity of P-2 DRS is based on staging development of the pile and is approximately 220,000 in Stage I; 1,160,000 cubic yards in Stage II; and 7,000,000 cubic yards in Stage III. Figure 12 is a cross-section of P-2 DRS from E to E'. Figure 13 is a cross-section of P-2 DRS, from F to F'. Placement of development rock will start at the lowest elevation and build the bench in a sequential manner.

Idaho BMP guidelines for mines will be practiced. Straw bales certified to be weed-free and/or silt fences will be placed to trap any soil that does erode. A diversion ditch will route stormwater away from areas of disturbance. Figure 15 shows the approximate location of diversion ditches and other water management controls. Concurrent reclamation will be more fully described in the detailed reclamation plan and cost estimate.

2.4.3 Reclamation of Development Rock Storage Areas

Concurrent reclamation for P-1 DRS and P-2 DRS is planned to minimize visual impacts from the operation. The development rock storage areas are constructed to allow for concurrent reclamation minimizing overall regrading needed at the end of the project. Figure 4 shows a general cross section of the design and the overall grade of the dump at closure. A combination of end-dumping and placement will be completed as appropriate to maintain a stable pile as designed. As the rock pile begins to encroach on the design limits, a bench will be constructed in

20-foot lifts staged to meet the overall slope design. A 30-foot offset bench will be left until final regrading of the dump occurs during concurrent and final reclamation. The overall slope of the dump will be approximately 2:1. Concurrent reclamation will occur annually or as a segment is completed. The intention is to maintain a minimal amount of rock face unreclaimed.

Table 4
PRODUCTION VOLUME ESTIMATES

AREA	VOLUME (cy.)
Pit 1	
Flagstone	XX
Development Rock	6,348,660
Pit 2	
Flagstone	XX
Development Rock	950,000
P-1 Development Rock Storage Area Storage Capacity	390,000
P-2 Development Rock Storage Area Storage Capacity Stage I	220,000
P-2 Development Rock Storage Area Storage Capacity Stage II	1,160,000
P-2 Development Rock Storage Area Storage Capacity Stage III	6,910,392

2.5 ACCESS ROADS

Access to the various mine facilities will have to be upgraded to ensure compliance with safety and operational requirements. The access road from the Administration/Staging area to the P-1 DRS will be realigned to meet overall grade requirements (approximately 10 percent grade) with an approximate running width of 20 feet. The remaining roads will be constructed to a 30-foot running width per MSHA regulations.

When determining road width, the primary factor to consider is that the road should accommodate 2.5 to 3 times the width of the widest equipment (10 feet) that will travel on the road. Given the steep terrain and haulage requirements, L&W Stone believes this is a prudent design for project safety. The 30-foot road width accommodates the width of the widest vehicles at the site and allows for two vehicles to travel in an opposing direction with one vehicle width between these vehicles.

Figure 5 shows a cut and fill cross section of a typical road. The overall width of disturbance will vary depending on the cut/fill quantities required to meet the 20 or 30-foot running width.

Idaho BMP guidelines will be employed during road construction and while utilizing access roads until reclamation is complete. Ditches, straw bales, silt fences, and/or run-outs will be constructed as appropriate to mitigate erosion from the roads. Periodic visual inspections will be conducted to verify that these BMPs are adequate. Straw bales certified to be weed-free and/or silt fences will be placed to catch any soil that does erode during road construction and mine operation.

2.6 SUPPORT FACILITIES AND SERVICES

2.6.1 Administration Office, Parking Area and Storage/Loading Area Complex

The area is proposed to be extended to the east of the current disturbance boundary to facilitate a larger work area. This expanded area is depicted in an extended disturbance boundary around the Administration Area on Figure 7. Storage of materials, supplies and flagstone will continue as currently managed. The addition of a circular gravel-covered load-out driveway will be constructed to minimize the amount of mud/dirt "tracked" onto the highway from flagstone transport trucks. The trucks will enter the circular driveway and a forklift will load them in place, eliminating the need to enter the yard.

A water well will be drilled on the northeast side of the Administration Office/Staging area to support mine operations, such as dust control. The proposed location of the well is shown on Figure 7, Proposed Project. A water take permit application has been filed with the Idaho Department of Water Resources. The permit application is for 211 gallons per minute or 340 acre/feet per annum. This quantity will be sufficient for mining operations, dust suppression, and future domestic water.

2.6.2 Equipment Storage and Maintenance Areas

The equipment used to produce the flagstone product is limited to the heavy equipment necessary to break, remove, load and transport the stone to the storage/loading area. Splitting and shaping of the rock is done at the Quarry. No chemical processing or manufacturing activities occur at the Quarry.

The equipment storage and maintenance needs of the operation are minimal and occur in the pit areas where each piece of equipment is used. Mobile equipment may be used in any or all locations throughout the operation and, depending on the task at hand and the use at the end of the day, mobile equipment may be stored in any or all locations of the operation. All oils, lubricants and antifreezes are disposed of offsite in accordance with State and Federal environmental requirements. The used oil is removed by the same company that services the mobile equipment.

The long-term operating plan for the Quarry requires no change in the equipment storage and maintenance area locations or operating procedures. No additional facilities or disturbances are anticipated for these activities.

2.6.3 Fuel/Lubricants Storage Areas

Fuel and lubricant use and handling in the future operations will be similar to the current fuel and lubrication handling procedures. However, fuel and lubricant storage areas will be consolidated into one storage area located in a central area between Pit 1 and Pit 2. This new storage area will be constructed within several years of plan approval. The proposed location is shown on Figure 7, Proposed Project. The general arrangement of the fuel and lubricant storage facility is shown in Figure 14.

Fuel oil tanks will be stored above ground in a lined facility and will be sized to hold the quantity of the largest tank plus 10 percent of the volume, along with the 10-yr/24-hr rain event. The total required containment area size is 918 cubic feet in the containment area. The largest tank, a 5,000 gallon diesel fuel tank plus 500 gallons (668 cubic feet), plus an additional 250 cubic feet

to contain 2 inches of precipitation from a 10-year, 24-hour storm event combines for a total of 918 cubic feet (Barfield, B. J., R. C. Warner, and C. T. Haan (1981). Applied Hydrology and Sedimentology for Disturbed Areas). The proposed actual containment size will be 1,500 cubic feet (30 feet by 50 feet with a one-foot berm). A 10 mil plastic liner will be placed over the berm and inspected for holes or other damage that would impact the integrity of the liner. Repairs and/or replacement will be made immediately upon discovery.

Section 1.4.5 describes the current fuel tank locations and capacities. Fuel and lubrication storage currently located in Pit 1 and Pit 2 will move periodically within the pit limits until a new storage area is constructed that consolidates Pit 1 and Pit 2 fuel and lubricant materials. The relocated facilities will be constructed to the specifications above. This flexibility is needed to work around the mining activities.

The consolidated fuel and lubricant storage facility will contain the following:

Fuels

- 1-3,000 gallon diesel fuel tank (formerly Pit 1)
- 1-500 gallon diesel fuel tank (formerly Pit 2)
- An additional 5,000-gallon diesel tank to accommodate more trucks and vehicles
- 1- 250 gallon gasoline fuel tank (formerly Pit 1)
- 1-1,000 gallon tote of used oil (formerly Administration area)

Lubricants (all formerly in Pit 1)

- 1- 250 gallon tote of motor oil
- 1- 250 gallon tote of hydraulic oil
- 1- 250 gallon tote of antifreeze
- 2- 55 gallon drums drill oil
- 1- 250 gallon tote of engine oil

2.6.4 Drilling and Blasting and Explosives Storage Areas

Drilling and blasting will be required to mine the flagstone. Two explosive storage areas are currently on-site and will have to be relocated to support mine development. Explosives Storage Area 1, where the ANFO is stored, will have to be moved from its present position due to mine pit limits. It will remain the same general size. Explosive Storage Area 2, which stores other explosives materials, will be relocated to allow construction of P-2 DRS. However, relocation of these sites will not occur until pit expansion and/or development rock storage area construction commences. The current and proposed explosives storage locations are shown in Figures 6 and 7, respectively.

Other materials stored in the magazines include other blasting agents, delays, booster caps, and the non-electric blasting system materials.

A bulk storage silo for ammonium nitrate fertilizer (a non-explosive agent used for blasting) is proposed to be built in area adjacent to the Administration/Staging Area as shown on Figure 7. The storage silo, which will hold approximately 40,000 pounds of ammonium nitrate, will be erected allowing bulk deliveries to occur on an "as needed" basis. The containment area will be approximately 50 feet by 100 feet. Ammonium nitrate (AN) is added to a bulk handling truck where fuel oil (FO) is mixed to produce ammonium nitrate fuel oil (ANFO). The ANFO is placed into the drill hole.

The maximum quantity of pre-mixed ANFO explosive that is, and will be stored at one time, is 15,000 pounds. Currently, 7,500 pounds of ANFO are delivered twice per month. The ANFO is bagged and in a pellet form commonly called "prill".

Section 1.4.6 Explosive Storage Area provides discussion on explosive storage and handling required by law. Under this proposal there will be no change to the manner explosives are handled and will remain consistent with current practices. The project will comply with all MSHA regulations concerning explosives storage and handling.

An additional drill rig will be used to provide additional drilling and blasting capabilities for the project. The new drill will have the capability to drill a 6 ¾ inch diameter hole for blasting. The average depth drilled will be 25 feet for waste shots and 12 feet in flagstone. A drill pattern spacing of 16 feet by 16 feet will be used for the larger diameter holes. There will be approximately 3 shots per week with an average of 150 holes per pattern for the combined drilling units. The drill pattern and other design elements will vary dependent on ground conditions and other factors.

There will be no change in the current type of explosives used for the project. However, changes for the type of explosives may occur during operations and will be handled in accordance with MSHA and manufacturers' requirements. Only persons trained and experienced in the handling and use of explosive material will be permitted at the blast site. Trainees or inexperienced persons shall work under the direct and immediate supervision of a trained person.

For the 6 ¾ inch diameter drillholes, 150 pounds of explosives will be the typical load planned for the patterns for waste shots; 12 pounds of explosives will be the typical load planned for flagstone shots.

The loading sequence will involve placing a booster cap and detonating cord down the hole, and adding the explosives and backfill to the hole collar with drill cuttings for stemming material.

2.6.5 Employees and Job Categories

L&W Stone anticipates an increase in staffing to implement the proposed plan. Approximately 100 employees will be required at the peak of mine production. This would include the following types of job categories:

- 25-Equipment Operators
- 8-Labors/Maintenance
- 62-Splitters
- 2-Office Staff
- 3-Supervisors

The mining activities could occur 24 hours per day, 7 days per week and 12 months per year. Only one shift is planned at this time. Operations will vary and will be dependent on the market

conditions. Depending on the weather conditions, splitter numbers typically will be reduced or eliminated for the period January through March of any given year.

2.7 WATER AND DUST MANAGEMENT PLAN

Surface water from roads, pits and other active mine areas will be managed using Best Management Practices (BMPs) described in the Idaho Department of Environmental Quality's Catalog of Stormwater Best Management Practices and the Manual of Best Management Practices, Idaho Department of Lands, 1992.

In general, runoff from the pit areas will be confined within the pit limits and allowed to infiltrate into the ground. Limited precipitation that contacts the development rock storage areas will infiltrate through the coarse rock material.

2.7.1 Dust Management

Roads and work areas will be sprayed by a water truck with a 5,000-gallon capacity for dust suppression. Dust suppression practices will be employed when work activities create dust clouds that are visible beyond the immediate work area. The Idaho DEQ's Catalog of Stormwater Best Management Practices suggests sprinkling water at a rate of 3.2 gallons per acre, so that soil is wet, but not saturated (www.deq.state.id.us/water/stormwater_catalog).

Water and/or chemical additives will be used to control dust on haul roads, development rock storage areas, pits, and other disturbance areas. Dust management methods will include the following:

1. Daily application of water when required to reduce/eliminate visible dust as a result of mining practices.
2. A 5,000-gallon water truck used to apply the water sprays.
3. Chemical additives, such as magnesium chloride, may be used to reduce water use, if appropriate.
4. Topsoil stockpiles seeded to reduce dust.
5. Weather conditions will impact the need for dust suppression.

2.7.2 Water Management

Water management for disturbed sites will be applied on a site-specific basis and may include any of the following methods or a combination of these methods:

- Water bars (exploration roads);
- Rolling dips (exploration roads);
- Drainage and diversion ditches;
- Berms;
- Straw bales certified to be free of noxious weed seed; and/or
- Silt fence.

Water bars will be constructed where necessary on exploration roads and on road surfaces as part of reclamation. Water bars will be constructed by building a cut and berm at a downward angle across the roadway, extending from the cutbank to the opposite fill shoulder. Water bars reduce erosion by diverting storm water runoff from the road surface and directing it to a safe discharge area. The cut dimensions will be up to 16 inches deep across the road, 8 to 16 inches deep at the outlet, and 3 to 4 feet wide. Runoff will be directed onto fill material. A flow dissipater will be installed where runoff hits the fill, if necessary. Drainage will be directed away from the fill.

When used as the only means of controlling water flow, water bars will be spaced as follows:

- 300 to 500 feet apart where road grades are 2 to 5%;
- 200 to 300 feet apart where road grades are 6 to 10%;
- 100 to 200 feet apart where road grades are 11 to 15%; and
- less than 100 feet apart where road grades are 16 to 20%.

Water bars may also be built above grade changes to prevent water from flowing down steeper portions of roads.

Water bars will be constructed by cutting each water bar into solid soil to a minimum depth of 6 inches next to the cutbank and 8 inches at the road shoulder, with an adverse grade on the downroad or downgrade side of the water bar. A continuous, firm berm of soil 6 inches above

normal grade, parallel to the water bar, will be cut on its downhill side. A bank tie-in point, cut 6 to 12 inches into the roadbed, will be included. The completed water bar will extend across the full roadway width, aligned at an angle of 30° to 40° relative to the roadway. If inspections show that erosion is occurring below the water bars, riprap or a silt fence will be installed at the place of erosion. Also, inspections will include a check to be sure that the lower end is open and is clear of sediment, so that water can easily flow away from the roadway.

Where appropriate, such as on long inclines to keep storm water from flowing down the road, and where road grades are less than 5%, rolling dips will be constructed in place of water bars. Rolling dips will be built into the road, following the natural contours of the land. The dip will be 1 foot deep, with a 23 foot long approach on the downgrade side and a 66 foot long approach on the upgrade side. Inspections of rolling dips will ensure that outflows are kept free of debris to prevent ponding of water on the road (www.deq.state.id.us/water/stormwater_catalog).

The primary water control method on operational roads will be drainage ditches or sumps constructed along road edges to collect stormwater runoff. The typical road cross section with a drainage ditch is shown in Figure 5. Silt fences and straw bales will be placed where necessary.

Silt fences will be made of burlap, or pervious polypropylene, nylon, polyester, or polyethylene. The fabric must filter 75 to 85% at a minimum (Idaho Standards for Public Works Construction) or meet the standards specified in Idaho's Catalog of Stormwater Best Management Practices. Posts that hold up the filter fabric will be spaced no more than 10 feet apart when using a wire mesh support and no more than 6 feet apart when using extra strength filter fabric, which does not require a wire mesh support. When fabric is spliced together, there will be at least 6 inches of overlap of material. Inspection of silt fences will include checking for damage, such as rips and tears, and for the height of accumulated sediment. When the height of sediment reaches half the height of the fabric material, the sediment will be removed and stored as topsoil, if appropriate. Otherwise, it will be placed in the development rock storage area.

Straw bales will only be used where water flows and drainage area are limited in size. The straw bales will be embedded into the soil at least 6 inches and anchored with stakes that are at least 2”x2”x36” or with steel drift pins driven 18” into the ground. Bales will be inspected after the first runoff event, and after significant runoff events thereafter. Straw bales have a useful life of 3 months, maximum; therefore, they will be replaced at least every 3 months. The bales will be placed in a single row lengthwise on the contour for sediment control in sheet flows. Gaps between the bales will be filled with tightly wedged straw. Inspections will ensure that runoff is flowing through the bales and not around them. In addition, sediment will be removed when it has reached 1 foot in height behind the bales (www.deq.state.id.us/water/stormwater_catalog).

Catch basins and flow dissipaters will be constructed if the water management controls described above do not adequately control the flow of water over roadways and other disturbed surfaces. Berms will be constructed at the toe of P-1 DRS and P-2 DRS and other disturbance areas, such as the administration area and chemical and fuel storage areas, to collect surface run-off. Diversion ditches will be constructed where necessary around development rock storage areas. Water management controls are shown on Figure 15, Water Management Plan Map.

2.7.3 Concurrent Reclamation

Topsoil stockpiles, development rock storage areas, and road berms will be concurrently reclaimed, including regrading and seeding. The topsoil stockpile will be protected for future reclamation purposes. The topsoil will be seeded with a BLM-recommended seed mix to minimize weed growth and to keep the soil in place. Berms will be placed around the topsoil stockpile to prevent any of the topsoil from being lost due to erosion. The development rock storage area and road berms will be revegetated upon completion of activities in a given area.

2.8 SITE SECURITY

Site security will be provided by placing a gate across the entrance road. The gate will be locked during the hours that the facility is not operating. Signs will be posted as required by law. The

signs will provide a contact name and phone number, in the event that the site needs to be accessed, for example, by the power company.

2.9 SCHEDULE OF OPERATIONS

The Quarry will operate for a minimum of 40 years. The schedule of activities will be dependent on market demand and will drive the development and expansion of each component of the project.

At the current time, demand for building materials is greater than the mine production. Pit 1 has a maximum production rate of approximately XX cubic yards per year. Pit 2 has a maximum production rate of approximately XX cubic yards per year. Due to physical characteristics of the flagstone and operational constraints, it is expected that only limited production expansion can occur from these pits. To support additional growth opportunities to meet the market, expansion into other pits will be required to permit sufficient sequencing of splitters and overburden mining operations. The exploration aspect of the project will be vitally important to the overall production schedule.

Mining is planned for both Pit 1 and Pit 2 in year 1. Production will be increased immediately to the full capacity of the two pits (X&X cubic yards respectively). The estimated mining sequence is presented in this section. Actual production throughout the life of the project will be dependent on many factors including market demand, price and recoverable flagstone from the pits.

Based on the planned production rate, Pit 1 will last approximately X years and Pit 2 will last approximately X years. The pits have been broken into phases representing years after plan approval. As mentioned previously, annual assessment of mine progress will be completed for bonding purposes and submitted to the BLM.

Development rock storage areas were developed to address the anticipated waste from Pit 1 and Pit 2. Initially, mine waste from Pit 1 will be hauled to P-1 DRS and will switch to P-2 DRS once that capacity is full. Mine waste from Pit 2 will be placed into P-2 DRS.

Scheduling of the development rock storage area was completed to coincide with anticipated mine production. Market demand or other factors could accelerate pre-stripping requirements to meet market demand for flagstone. The annual assessment will maintain bonding coverage appropriately.

Year 1

- Construction of P-1 DRS and the initial phases of P-2 DRS
- Access road alignment and widening
- Expansion of the Administrative/Staging Area
- Exploration activities

The tables shown below provide the estimated quantities for volumes of development rock that will be excavated from each of the pits, and then subsequently stored in the two Development Rock Storage areas. These tables are based on XX cubic yards per year of flagstone production from Pit 1 and XX cubic yards per year from Pit 2. L & W Stone will remain within the approved disturbance boundary and bond amount during operation versus any time schedule outlined below.

Table 5 DEVELOPMENT ROCK EXCAVATION SCHEDULE			
PHASE	**DEVELOPMENT ROCK VOLUME, EXCAVATED**	**PIT 1**	**PIT 2**
Year 1-5	687,500	450,000	237,500
Year 10	1,637,500	1,400,000	237,500
Year 20	2,237,500	2,000,000	237,500
Year 30	2,736,160	2,498,660	237,500
Year 43	0	0	0
TOTAL (BCY)	**7,298,660**	**6,348,660**	**950,000**

Table 6 DEVELOPMENT ROCK STORAGE SCHEDULE				
PHASE	**P-1 DRS**	**P-2 DRS Stage I**	**P-2 DRS Stage II**	**P-2 DRS Stage III**
Year 1-5	390,000	220,000	77,500	
Year 10	0		1,082,500	555,000
Year 20	0			2,237,500
Year 30	0			2,736,160
Year 43	0			0
TOTAL	**390,000**	**220,000**	**1,160,000**	**5,528,660**

Note: Development rock estimates are based on limited geologic information and are subject to change.

2.10 EXPLORATION ACTIVITIES

Exploration of the property is and will be part of an on-going effort to replace and supplement existing flagstone resources. L&W plans to complete a minimal level of exploration to identify the viability of known mining deposits and to discover new zones for future expansion.

A general exploration target is known at this point to contain resources of interest to the operation. As such, the exploration plan is developed to provide flexibility. In order to effectively complete exploration, it is planned that drilling, trenching and test pits will be necessary to define the extent of the resource. The area of interest is shown on Figure 7 and encompassed pits and new zones.

2.10.1 Exploration Pit 1 and 2

Part of the exploration program will require in-pit/adjacent drilling to test defined rock zones at depth and/or identify additional zones for pit expansion. Holes would be drilled to a depth of approximately 500 feet. Expansion of Pit 1 will likely occur towards the east and will be the focus of exploration activities.

Pit 2 would consist of drill holes approximately 300 feet deep. The objective would be to locate the down-dip extension of the currently identified rock zones for pit expansion design.

2.10.2 New Exploration

Property controlled by L&W Stone, and included in the revised Amended Plan of Operations, is extensive and contains significant resource targets. In order to allow flexibility, L&W Stone is proposing to use 15 acres of “revolving” disturbance area for exploration activities. The 15 acres for exploration purposes is part of the planned acreage disturbance total of 165.9 acres listed in Table 3 in Section 2.2.

This disturbance would include drill pads, roads, trenches, test pits and other activities necessary to perform exploration. L&W Stone would maintain the exploration disturbance at or below the 15-acre allowance. Prior to additional exploration disturbance, L&W Stone will reclaim certain exploration disturbance sufficient to maintain the 15-acre maximum area disturbed. The 15 acres of "revolving" exploration disturbance area would consist of a maximum of 2 acres of test pits or trenches, 8 acres of roads, and 5 acres of drill pads. No additional exploration disturbance will be initiated if 15 acres of disturbance is reached or the limit for any single component (trenches, roads, etc.) is met, until reclamation is completed on an equal or greater amount of acreage.

Current areas of exploration interest are outlined on Figure 7. Activity could occur any where within this boundary. The objective would be to develop two more pits to supplement the current mine production and meet a growing market demand.

In addition, exploration within the area of interest will be completed to test extension of existing zones and identify new rock zones that may be repeating units in this area.

It is anticipated that some test pits and drillholes would be required in this area to adequately define the resource for pit development. Hole locations would fall within this area of interest and would be drilled to an approximate depth of 500 feet.

Using a "credit" of 15 acres allows for flexibility in locating exploration disturbance that supports data collection. In this manner, the BLM knows that no more than 15 acres of unreclaimed land will be impacted at any time during exploration; and that the activity will be focused in the area of interest defined by the operator. L&W Stone will provide the BLM an annual report and a map showing any new proposed area of interest, with the restriction of no more than 15 acres of unreclaimed exploration disturbance.

The appropriate agency will be notified of any resources of cultural or historical value discovered during the course of additional mine development or exploration. Activities creating disturbance in the area of the discovery will be halted until further investigation is undertaken.

The detailed reclamation plan and cost estimate will define the proposed acres of disturbance at any given time. The reclamation plan will also provide more detail regarding the length of time a disturbed area would remain open before it is reclaimed.

2.11 MONITORING PROGRAM

The entire project site will be monitored while in operating mode. The monitoring program will include slope stability, water management for minimization of erosion, and the status of revegetation. Topsoil stockpiles will be inspected to ensure that the piles are not eroding, that the seeding efforts have been successful, and that weed growth is not occurring. Roads and other disturbed surfaces will be inspected for formation of rills, gullies, sediment loss, and other signs of erosion.

Success of concurrent reclamation will be monitored in two ways. Areas subjected to physical reclamation, such as earthwork and growth media application, will be checked for erosion periodically and immediately following major rain events and earthquakes. Remedial action to correct instability will be taken as soon as feasible following detection of substantial erosion or loss of growth media. Vegetation success will be monitored qualitatively by visual inspection on an ongoing basis by L&W Stone personnel and by other regulatory agency personnel, as appropriate. For example, the weed management program will be conducted by the Custer County Noxious Weed Department, during the operation phase and during reclamation.

BMPs such as hay bales, silt fences, and diversion ditches will be inspected periodically to ensure that sediment is getting trapped, and to ensure that placement has not been altered by high winds or water flows. Berms and trenches will be inspected to ensure that they are performing their function as intended, whether to prevent rockfalls or for protection of chemical/explosive storage areas .

2.12 SPILL PREVENTION, CONTROL, AND COUNTERMEASURES PLAN

This SPCC Plan is prepared in compliance with the guidelines established in the Code of Federal Regulations, Title 40, Protection of the Environment, Chapter 1 – Environmental Protection Agency, Subchapter d – Water Programs, Part 112 – Oil Pollution Prevention.

2.12.1 Chemical Quantities in Storage

L&W Stone stores various fuels and lubricants to support the mobile equipment.
Currently, diesel fuel is stored on-site in:

- One 500-gallon diesel fuel tank at Pit 2, in a containment area lined with 10-mil plastic,
- One 500-gallon diesel tank in the lower yard of the Administration area in a containment area lined with 10-mil plastic, and in
- One 3000-gallon tank, stored with the bulk lubricants listed below in Pit 1.

A 250-gallon tank is used to store unleaded gasoline within the boundaries of Pit 1.

Bulk lubricants are also stored on-site and consist of the following:

- One 250-gallon tote of motor oil,
- One 250-gallon tote of hydraulic oil,
- One 250-gallon antifreeze tote
- Two 55-gallon rock drill oil drums, and
- One 250-gallon engine oil tote.

The bulk lubricants listed above, plus the 250-gallon gasoline tote and the 3,000-gallon diesel tank, are stored within a containment area which is located in the Pit 1 area. The containment area is designed to hold 3,000 gallons, the quantity stored within the largest container, the diesel tank described above, plus the precipitation from a 10-year, 24-hour storm event.

In addition to the above, there are three used oil containers. A 250-gallon used oil tote is stored at the Pit 1 fuel loading area. Another 250-gallon used oil tote, plus a 1,000-gallon tank of used oil are stored in the lower yard of the Administration area.

All current fuel and lubricant storage locations are shown in Figure 6, Existing Project.

The proposed project includes a consolidated fuel and lubricant storage area to be constructed in the area between Pit 1 and Pit 2. The proposed location is shown on Figure 7, Proposed Project.

A bulk storage silo for ammonium nitrate (a non-explosive agent used for blasting) is proposed to be built at an area adjacent to the Administration/Staging Area. The storage silo, which will hold approximately 40,000 pounds of ammonium nitrate, will be erected allowing bulk deliveries to occur on an "as needed" basis. The silo will be built on a concrete pad and foundation for better containment and effective material handling. The proposed location for the ammonium nitrate storage area is shown in Figure 7, Proposed Project.

The maximum quantity of pre-mixed ammonium nitrate fuel oil (ANFO) explosive that is currently, and will continue to be stored at one time, is 15,000 pounds at the explosives/storage areas. Currently, 7,500 pounds of ANFO are delivered twice per month. The ANFO is bagged and in a pellet form commonly called "prill". The current and proposed locations for explosives storage magazines are shown in Figure 6, Existing Project, and Figure 7, Proposed Project.

2.12.2 Spill Reporting

All spills, regardless of size or quantity, will be reported immediately to one of the Site Managers. The following information regarding the spill will be communicated to the Site Manager:

- The chemical name of the substance that spilled or leaked,
- An estimate of the quantity that spilled or leaked,
- The time and duration of the release,
- Where the release is deposited,

- Why the release occurred, and
- Any immediate health and safety, or environmental threats or issues.

Spills that must be reported immediately to the following agencies include:

- Spills of any petroleum hydrocarbon substance that exceeds 25 gallons;
- Spills that cannot be totally cleaned up within 24 hours; and
- Spills of any substance that reach a surface water body.

In addition, if a spill of any of the substances listed above should occur that threatens a water body (such as the Salmon River) and/or the ACEC/RNA, and/or causes or has the potential to cause environmental damage, that spill must also be reported to the following agencies:

Idaho State Communication Center: (800) 632-8000 or (208) 846-7610
National Spill Response Center: (800) 424-8802
Idaho Department of Environmental Quality: (208) 373-0502
Bureau of Land Management: (208) 879-6200

2.12.3 Clean Up Procedures

Trained personnel will immediately respond to contain the spill. The first step in any emergency situation is to ensure that personal safety is not threatened. Thus, the procedures are as follows.

1) Survey the situation and assess the safety and environmental threats.
2) Never address any emergency situation alone; have a back-up person or attendant nearby.
3) Assemble the required safety and clean up equipment.
4) Always wear chemical protective gloves to clean up a spill. If the spill or leak has the potential to contaminate clothing or skin, wear chemical protective suit, such as tyvek, chemical protective boots, goggles, and any other gear as necessary.
5) Prevent the spill or leak from spreading by using oil absorbent socks, building a dike, or other covering with sand or other absorbent material. These materials, along with the safety equipment, shall be stored in locations easily accessible from all chemical storage areas.

6) Plug a leak from a drum or container with a compatible material to stop material from leaking.
7) Smaller spills can be cleaned up with rags. The rags can be placed in closed, sealed containers with other compatible rags.
8) Larger leaks/spills will be cleaned up by absorbing the spilled material with absorbent socks and pillows. The socks and/or pillows will be placed in empty 55 gallon drums compatible with petroleum hydrocarbon materials. A company equipped to clean up hazardous waste spills will be called to haul away the spilled material for proper disposal.
9) Assess what actions could have been taken to prevent the spill/leak from occurring.

2.12.4 Storage Area Inspections

All chemical storage tanks are above ground. Therefore, thorough inspections are easily accomplished. The tanks are inspected weekly for any signs of weakness or deterioration, such as dents. The tank inspection also includes checking for:

- Drip marks,
- Discoloration of tanks,
- Puddles containing spilled or leaked material,
- Corrosion,
- Cracks, and
- Localized dead vegetation or soil staining.

The tank foundation and containment area is inspected for the following:

- Cracks,
- Discoloration,
- Puddles containing spilled or leaked material,
- Settling,
- Gaps between the tank and foundation, and
- Damage caused by vegetation roots.

Valves on the tanks are designed so that any flow from the valve would be contained within the containment area.

2.12.5 Emergency Phone Numbers

Idaho Emergency Spills Communication Center
(800) 623-8000 - 24-hour, in state only
(208) 846-7610 - 24-hour

National Spill Response Center
(800) 424-8802

Idaho Department of Environmental Quality
Boise Switchboard – (208) 373-0502

Fire Department and Ambulance
911 or call the Sheriff's office for dispatch and non-emergencies: (208) 879-2232

2.12.6 Vulnerable Areas

L&W Stone is located adjacent to an Area of Critical Environmental Concern/Research Natural Area (ACEC/RNA), with some portions of the project overlapping the ACEC/RNA. In addition, the Salmon River and East Fork Salmon River are adjacent to the project area. Spills are most likely to reach the river during transportation to the site, particularly on Highway 75. It is unlikely that a spill would occur in the ACEC/RNA.

2.12.7 Spill Scenarios

The most likely spills to occur are small leaks and spills that may occur during fuel transfers. Any environmental damage from this type of spill/leak is prevented by using drip pans. The least likely spill that could occur is a tank rupture of the largest tank in the storage area, the 3,000 gallon diesel tank. The contents of the ruptured tank will be confined to the containment area.

An outside contractor will be called in to remove material and to dispose of it in an approved manner. The residual material will be cleaned up with absorbent socks and also disposed of by an outside contractor.

2.13 BLAST VIBRATION PREDICTION CALCULATIONS

Peak particle velocities were predicted by L&W Stone's supplier of blasting materials, Dyno Nobel. The calculations were based on the following blasting design metrics.

For the 4.0 inch diameter holes:

- 12-foot drill depth
- 10-foot bench height
- 10-foot by 10-foot pattern
- 16 pounds of explosive per hole
- Nominal powder factor of 2.3 yards/pound of explosive (0.43 pounds per yard of material).

For the 6.75 inch diameter holes:

- 23-foot drill depth
- 20-foot bench height
- 14-foot by 14-foot to 16-foot by 16-foot pattern
- 150 pounds of explosive per hole
- Nominal powder factor range of 0.96 – 1.26 yards/pound of explosive (0.79 pounds per yard of material).

The following formula was used to predict the peak particle velocity levels:

$PPV = k \times SD^{-b}$

Where: k = y intercept,

SD = scaled distance value,

And –b = the slope of the regression line.

Typical values were used since actual data is not available. For typical surface blasting associated with quarrying operations, a value of 160 is generally used for the k value and a value of -1.6 is used for the (-b) value.

The calculations were based on the following scenarios:

- Power line located 1,000 feet from Pit 2;
- Residences located 1,300 feet from the exploration boundary; and
- Residences located 3,500 feet from Pit 1.

Several aspects of the blast design cannot be totally taken into account by the basic vibration prediction calculation, such as confinement, initiation sequence impact, shot orientation, and overburden effects. Therefore, prediction of safe vibration levels must include a significant safety margin.

The following vibration levels were calculated:

Distance to structures from blast area in feet	**4.0 inch hole prediction (inches per second – ips)**	**6.75 inch hole prediction (inches per second – ips)**
1,000	0.023	0.140
1,300	0.015	0.092
3,500	0.003	0.019

The projections were then compared to the safe blasting recommendations established by the U.S. Bureau of Mines in Report of Investigations RI-8507. The peak particle velocity limits range from 0.50 ips to 2.00 ips depending on the frequency content of the transient vibration waves impacting the structure in question. Since this information is not available, the worst-case scenario was used as a comparison. The maximum projected vibration value is 0.14 ips impacting the power line. This value represents only 28% of the 0.50 ips worst-case safe blasting limit, well within safe levels. The maximum projected vibration level impacting the

residence located 1,300 feet from the exploration boundary is only 18% of the 0.50 ips worst-case safe blasting limit. Adding to the safety factor, the worst-case scenario is impacting the power line, which is built to withstand higher frequencies than a residence. Comparisons done by Dyno Nobel show that the vibration levels produced by the blasting produce less vibration in the residences than walking or slamming a door (Dyno Nobel).

2.14 WEED MANAGEMENT

A weed management program has been established, with the guidance of the Custer County Department of Noxious Weeds, to control weeds before they have the opportunity to establish and spread. The Project site is surveyed each spring for noxious weeds by the Custer County Department of Noxious Weeds. Any noxious weeds that are found during the surveys are eradicated with an herbicide spray, generally 2,4-D (either ester or amine, depending on the weather conditions). A follow-up visit is made by the Department after a significant rain event and in the fall, to ensure complete eradication of noxious weeds. L & W Stone will cooperate and assist with weed management efforts, as needed.

CHAPTER 3
CONCEPTUAL RECLAMATION PLAN

The Amended Plan of Operations provides details of the operating and closure plan for the project. As is customary for mine projects, the plan will be updated periodically to reflect changes in the Amended Plan of Operations. The final reclamation plan and cost estimate will be compiled after this Amended Plan of Operations has been granted conditional approval. In addition, the final reclamation plan will be submitted to the BLM for approval prior to initiating final closure activities.

Certain portions of the deposits will not be mined to preserve the existing view-shed from the road. This maintains a corridor along the highway that is minimized by mine facilities. L & W Stone believes that leaving this material and extending pit expansion in other directions helps to mitigate visual impacts.

The objective of the reclamation plan is to:

- Stabilize and protect surficial soil materials;
- Protect public health by eliminating hazards;
- Protect surface and ground water resources;
- Meet post-mining land uses;
- Minimize view-shed issues; and to
- Provide for concurrent reclamation.

The reclamation objectives will be met by regrading, reseeding and other similar means to stabilize the disturbance associated with the project. However, natural existing conditions at the site limit the ability to use revegetation as the sole method of stabilization. Steep rocky terrain provides limited soil resources from planned disturbed areas. Areas currently being mined also have limited topsoil and vegetative cover prior to mining disturbance. Therefore, reclamation

will be focused on stabilization and protection of soil erosion through the use of recontouring and regrading activities and in some cases using rock as a buffer/barrier against erosion.

The plan also recognizes that post-mining land uses are important to the overall development of the reclamation plan. The post mining land uses for the project area include mineral development, grazing, recreation, wildlife habitat and other similar land uses. These land uses are still possible at the project site after mining operations are completed.

The reclaimed surfaces for the entire project area are shown on Figure 16, Reclamation Plan Map.

3.1 PIT 1

3.1.1 Removal of Buildings and Equipment

Any equipment or buildings remaining in Pit 1 upon completion of final mining activities and initiation of final reclamation will be removed and hauled away.

3.1.2 Regrading/Reshaping

Pit 1 will be retained in its final configuration requiring minimal regrading activities. The reclaimed access road will traverse the east side of the pit, near the top of the highwall. Three-foot high berms will be constructed along the access road where it borders the pit, to restrict entry to the pit. The pit bottom will be ripped to a depth of at least 6 inches with a track dozer to reduce pit water retention. Mine designs are such that pit walls will provide long-term stability. Any open drill/bore holes will be plugged in accordance with state regulations concerning exploration drill holes.

The haul road which goes around Pit 1 will be converted to a public access road. Large boulders will be placed at points where the public could easily access the pit area, to discourage entry to pit areas.

Backfilling of Pit 1 is not currently possible. Current production needs are being met from two pits with most of the emphasis of production on Pit 1. In order for the mine to meet current and anticipated market demands, expansion of pit production is limited to the number of splitters that can work safely in the mine area. The orientation of the flagstone unit, depth and stripping requirements limit the expansion of production

rates in Pit 1 to the proposed limits discussed. Current and anticipated future market conditions are greater than production capability from Pit 1 and require that Pit 2 be mined at the same time to meet this demand. The anticipated large resource of flagstone available in Pit 1 (over 40 years) and the low rate of extraction require that multiple pits be in operation, eliminating the ability to sequentially mine the pits. The ability to backfill Pit 1 is limited because the resource will not be fully extracted prior to the production need to open additional pits.

Future consideration will be dependent on subsequent pits that may be developed and the full extraction of the resource from Pit 1. In that event, Pit 1 may be partially backfilled with development rock from the other pits.

3.1.3 Topsoil Placement

No topsoil placement or revegetation is planned for Pit 1. Because the pit walls are too steep for revegetation, and revegetating the pit bottoms has limited value, the limited topsoil resources from this area are better used elsewhere. Therefore, any salvaged topsoil will be used on development rock piles or other disturbance areas.

3.1.4 Seeding

Due to the steep slopes and limited topsoil in the area prior to mining, Pit 1 will not be reseeded.

3.2 PIT 2

3.2.1 Removal of Buildings and Equipment

Any equipment or buildings remaining in Pit 2 upon completion of final mining activities and initiation of final reclamation will be removed and hauled away.

3.2.2 Regrading/Reshaping

Pit 2 will be retained in its final configuration requiring minimal regrading activities. Three-foot high berms will be constructed on the west and southwest sides of the pit, but cannot be placed on the north and south sides of the pit due to the steepness of the highwall. The pit bottom will be over-blasted and ripped to a depth of at least 6 inches with a track dozer to reduce pit water retention. Mine designs are such that pit walls will provide long-term stability. Any open drill/bore holes will be plugged in accordance with state regulations concerning exploration drill holes.

Backfilling of Pit 2 is not currently possible. As with Pit 1, current production needs require that Pit 2 be mined at the same time. While anticipated resources at Pit 2 are smaller than Pit 1, backfilling cannot occur until the mineable resource is extracted. Market demands, flagstone quality and mining costs will all dictate those conditions. Pit 2 production expansion is also limited by the orientation of the flagstone unit and the operation of the splitters and mining operations. Based on current knowledge of potential new pit development areas, Pit 2 has the greatest opportunity to incorporate backfilling once the resource is mined out and other pits are developed. Future consideration will be given to incorporating backfilling into Pit 2 as the mine expands operations.

The ramp roads will be concurrently reclaimed as each road is no longer required to access the pit. Ramp roads will be reclaimed following the procedures provided for access roads in Section 3.6.

3.2.3 Topsoil Placement

No topsoil placement or revegetation is planned for Pit 2. Because the pit walls are too steep for revegetation, and revegetating the pit bottoms has limited value, the limited topsoil resources from this area are better used elsewhere. Therefore, any salvaged topsoil will be used on development rock piles or other disturbance areas.

3.2.4 Seeding

Due to the steep slopes and limited topsoil in the area prior to mining, Pit 2 will not be reseeded.

3.3 P-1 DEVELOPMENT ROCK STORAGE AREA

3.3.1 Removal of Buildings and Equipment

Any equipment or buildings remaining in the P-1 Development Rock Storage Area (P-1 DRS) upon completion of final mining activities and initiation of final reclamation will be removed and hauled away.

3.3.2 Regrading/Reshaping

The P-1 DRS area will be constructed in a manner that promotes limited regrading effort. The design of the 20-foot lifts and 30-foot bench offset allows regrading of the upper bench to a final slope of approximately 2:1. Generally, a track-dozer will "slice" the edges of the benches to fill in the bench below. Truck tire traffic will provide some compaction of the development rock storage area. However, reduced slope angles through regrading are the fundamental design principle to achieve stability in the pile. Figure 4 shows the concept for the final regrading of the slopes.

The P-1 DRS area will be reclaimed concurrently as each lift is completed. When P-1 DRS area has reached its design limit for development rock storage, final regrading of P-1 DRS will begin on the remaining lifts. The P-1 DRS area top surface will be crowned and regraded to promote water run-off away from the slope face and off of the top surface.

Run-off diversions will be retained around the perimeter to divert all water away and around the development rock storage area to promote long-term stability. At the discharge point of the run-off diversions, hay bales or sediment cloth will be placed to trap any sediment in the run-off water. Stabilization of the storage area will occur over time, limiting the need for sediment control. Water will be diverted to the northwest side of the storage area.

3.3.3 Topsoil Placement

Topsoil will be trucked from the topsoil stockpile and placed at the site. Track-dozers or graders will be used to spread soil material approximately 6 inches thick. If insufficient soil is available at this thickness, a thinner layer will be placed or BLM can prioritize those areas to receive soil based on site-specific conditions.

3.3.4 Seeding

The use of rocky material may be an appropriate alternative to revegetation that will match the natural rocky slopes at the site. However, all surfaces for the P-1 DRS area will be seeded, even if rocky slopes are generated where insufficient quantities of soil material are present.

Prior to seeding the area will be ripped or scarified with a dozer or grader. Seeding will be completed using the BLM approved seed mixture and application rate using either the broadcast or seed drill method as described in Chapter 3.18, Revegetation, and would occur during the designated seeding time period.

3.4 P-2 DEVELOPMENT ROCK STORAGE AREA –STAGE I

3.4.1 Removal of Buildings and Equipment

Any equipment or buildings remaining in the P-2 Development Rock Storage Area-Stage I (P-2 DRS –Stage I) upon completion of final mining activities and initiation of final reclamation will be removed and hauled away.

3.4.2 Regrading/Reshaping

The P-2 DRS-Stage I will be constructed in a manner that promotes limited regrading effort. The design of the 20-foot lifts and 30-foot bench offset allows regrading of the upper bench to a final slope of approximately 2:1. Generally, a track-dozer will “slice” the edges of the benches to fill in the bench below. Truck tire traffic will provide some compaction of the development rock storage area. However, reduced slope angles through regrading are the fundamental design

principle to achieve stability in the pile. Figure 4 shows the concept for the final regrading of the slopes.

The P-2 DRS-Stage I will be reclaimed concurrently as each lift is completed. When P-2 DRS-Stage I has reached its design limit for development rock storage, final regrading of P-2 storage area-Stage I will begin on the remaining lifts. The P-2 DRS-Stage I top surface will be crowned and regraded to promote water run-off away from the slope face and off of the top surface.

Run-off diversions will be retained around the perimeter to divert all water away and around the development rock storage area to promote long-term stability. At the discharge point of the run-off diversions, hay bales or sediment cloth will be placed to trap any sediment in the run-off water. Stabilization of the storage area will occur over time, limiting the need for sediment control. Water will be diverted to the northwest side of the storage area. Run-off diversions are shown on the Water Management Plan Map, Figure 15.

3.4.3 Topsoil Placement

Topsoil will be trucked from the topsoil stockpile and placed at the site. Track-dozers or graders will be used to spread soil material approximately 6 inches thick. If insufficient soil is available at this thickness, a thinner layer will be placed or BLM can prioritize those areas to receive soil based on site-specific conditions.

3.4.4 Seeding

The use of rocky material may be an appropriate alternative to revegetation that will match the natural rocky slopes at the site. However, all surfaces for the P-2 storage area will be seeded, even if rocky slopes are generated where insufficient quantities of soil material are present.

Prior to seeding the area will be ripped or scarified with a dozer or grader. Seeding will be completed using the BLM approved seed mixture and application rate using either the broadcast or seed drill method, and would occur during the designated seeding time period.

3.5 P-2 DEVELOPMENT ROCK STORAGE AREA –STAGE II

3.5.1 Removal of Buildings and Equipment

Any equipment or buildings remaining in the P-2 Development Rock Storage Area-Stage II (P-2 DRS – Stage II) upon completion of final mining activities and initiation of final reclamation will be removed and hauled away.

3.5.2 Regrading/Reshaping

The P-2 DRS-Stage II will be constructed in a manner that promotes limited regrading effort. The design of the 20-foot lifts and 30-foot bench offset allows regrading of the upper bench to a final slope of approximately 2:1. Generally, a track-dozer will "slice" the edges of the benches to fill in the bench below. Truck tire traffic will provide some compaction of the development rock storage area. However, reduced slope angles through regrading are the fundamental design principle to achieve stability in the pile. Figure 4 shows the concept for the final regrading of the slopes.

The P-2 DRS-Stage II will be reclaimed concurrently as each lift is completed. When P-2 DRS-Stage II has reached its design limit for development rock storage, final regrading of P-2 DRS-Stage II will begin on the remaining lifts. The P-2 DRS-Stage II top surface will be crowned and regraded to promote water run-off away from the slope face and off of the top surface.

Run-off diversions will be retained around the perimeter to divert all water away and around the development rock storage area to promote long-term stability. At the discharge point of the run-off diversions, hay bales or sediment cloth will be placed to trap any sediment in the run-off water. Stabilization of the storage area will occur over time, limiting the need for sediment control. Water will be diverted to the north side of the storage area through a diversion ditch.

3.5.3 Topsoil Placement

Topsoil will be trucked from the topsoil stockpile and placed at the site. Track-dozers or graders will be used to spread soil material approximately 6 inches thick. If insufficient soil is available

at this thickness, a thinner layer will be placed or BLM can prioritize those areas to receive soil based on site-specific conditions.

3.5.4 Seeding

The use of rocky material may be an appropriate alternative to revegetation that will match the natural rocky slopes at the site. However, all surfaces for the P-2 DRS-Stage II will be seeded, even if rocky slopes are generated where insufficient quantities of soil material are present.

Prior to seeding, the area will be ripped or scarified with a dozer or grader. Seeding will be completed using the BLM approved seed mixture and application rate using either the broadcast or seed drill method, and would occur during the designated seeding time period.

3.6 P-2 DEVELOPMENT ROCK STORAGE AREA- STAGE III

3.6.1 Removal of Buildings and Equipment

Any equipment or buildings remaining in the P-2 DRS-Stage III upon completion of final mining activities and initiation of final reclamation will be removed and hauled away.

3.6.2 Regrading/Reshaping

The P-2 DRS-Stage III will be constructed in a manner that promotes limited regrading effort. The design of the 20-foot lifts and 30-foot bench offset carried over from Stage I and Stage II allows regrading of the upper bench to a final slope of approximately 2:1. Generally, a track-dozer will “slice” the edges of the benches to fill in the bench below. Truck tire traffic will provide some compaction of the development rock storage area. However, reduced slope angles through regrading are the fundamental design principle to achieve stability in the pile. Figure 4 shows the concept for the final regrading of the slopes.

The P-2 DRS-Stage III will be reclaimed concurrently as each lift is completed. When P-2 storage area-Stage III has reached its design limit for development rock storage, final regrading of P-2 DRS-Stage III will begin on the remaining lifts. The P-2 DRS-Stage III top surface will

be crowned and regraded to promote water run-off away from the slope face and off of the top surface.

Run-off diversions will be retained around the perimeter to divert all water away and around the development rock storage area to promote long-term stability. At the discharge point of the run-off diversions, hay bales or sediment cloth will be placed to trap any sediment in the run-off water. Stabilization of the storage area will occur over time, limiting the need for sediment control. Water will be diverted to the north side of the storage area through a diversion ditch. The top surface will be crowned to divert water to the east side of the storage area. Run-off diversions are shown in Figure15.

3.6.3 Topsoil Placement

Topsoil will be trucked from the topsoil stockpile and placed at the site. Track-dozers or graders will be used to spread soil material approximately 6 inches thick. If insufficient soil is available at this thickness, a thinner layer will be placed or BLM can prioritize those areas to receive soil based on site-specific conditions.

3.6.4 Seeding

The use of rocky material may be an appropriate alternative to revegetation that will match the natural rocky slopes at the site. However, all surfaces for the P-2 DRS will be seeded, even if rocky slopes are generated where insufficient quantities of soil material are present.

Prior to seeding the area will be ripped or scarified with a dozer or grader. Seeding will be completed using the BLM approved seed mixture and application rate using either the broadcast or seed drill method, and would occur during the designated seeding time period.

3.7 ACCESS ROADS

The access roads discussed in this section specifically are: the roads that access Pit 1, Pit 2, P-1 Development Rock Storage Area, P-2 Development Rock Storage Area-Stage I, Stage II, and Stage III.

3.7.1 Removal of Equipment

Any equipment or buildings remaining on any of the roads associated with this project, upon completion of final mining activities and initiation of final reclamation will be removed and hauled away.

3.7.2 Regrading/Reshaping

When access to the pits, development rock storage areas and other facilities are no longer needed, the access roads will be ripped, then recontoured from the top of the cut to the bottom of the fill. All material cast to the side will be pulled back to prevent erosion along the road surface. The road berms will be pulled back to the road surface and blended with the natural contour of the slope (Figure 5).

In areas where the road was simply built on the existing contour, the road will be ripped to a depth of at least 6 inches and cross ditched. An excavator will be used to reclaim the roads built on a slope. Other roads will be reclaimed with a dozer. Idaho BMPs, as discussed in Chapter 2.7, Water and Dust Management Plan, will be employed as necessary.

3.7.3 Topsoil Placement

Soil is not available for placement, however; sufficient fine material is anticipated from the cut/fill zones to support revegetation.

3.7.4 Seeding

Access roads will be seeded in accordance with BLM's recommended seed mix, application rate, and application method described in Chapter 3.18, Revegetation.

3.8 ANCILLARY ROADS

Ancillary roads include those roads used to access fuel storage tanks, magazines, and other ancillary areas.

3.8.1 Removal of Equipment and Buildings

Any equipment or buildings remaining on or near the ancillary roads, upon completion of final mining activities and initiation of final reclamation, will be removed and hauled away.

3.8.2 Regrading/Reshaping

When access to the fuel storage tanks, magazines, and other ancillary areas is no longer necessary, the ancillary roads will be ripped, then recontoured from the top of the cut to the bottom of the fill. All material cast to the side will be pulled back to prevent erosion along the road surface. The road berms will be pulled back to the road surface and blended with the natural contour of the slope (Figure 5).

In areas where the road was simply built on the existing contour, the road will be ripped to a depth of at least 6 inches and cross ditched, then seeded as stated previously. An excavator will be used to reclaim the roads built on a slope. Other roads will be reclaimed with a dozer.

3.8.3 Topsoil Placement

Soil is not available for placement, however; sufficient fine material is anticipated from the cut/fill zones to support revegetation.

3.8.4 Seeding

Ancillary roads will be seeded in accordance with BLM's recommended seed mix, application rate, and application method as described in Chapter 3.18, Revegetation.

3.9 EXPLORATION ROADS

3.9.1 Removal of Equipment

Any equipment remaining on the exploration roads upon completion of final mining activities and initiation of final reclamation will be removed and hauled away.

3.9.2 Regrading/Reshaping

Exploration roads will be reclaimed upon completion of the exploration activities in the areas accessed by the road(s). Where the road was simply built on the existing contour, the road will be ripped to a depth of at least 6 inches and seeded as stated previously. In areas where the road was built using cut and fill methods, the exploration roads will be recontoured from the top of the cut to the bottom of the fill. All material cast to the side will be pulled back to prevent erosion along the road surface. The road berms will be pulled back to the road surface and blended with the natural contour of the slope.

Any remaining exploration roads will be handled in a manner consistent with mine access roads. It is anticipated that a limited amount of exploration roads will exist based on the proposed "revolving" acreage that limits exploration disturbance to 15 acres, with approximately 8 acres of that area being exploration roads. BLM has, and will continue to be consulted, regarding which roads will remain open for public access and which exploration roads will be reclaimed. This will be an ongoing process, as explored areas are reclaimed and new exploration roads are opened to access other areas of the project site for exploration.

3.9.3 Topsoil Placement

Soil is not available for placement; however, sufficient fine material is anticipated from the cut/fill zones to support revegetation.

3.9.4 Seeding

Exploration roads will be seeded in accordance with BLM's recommended seed mix, application rate, and application method as described in Chapter 3.18, Revegetation.

3.10 EXPLORATION AREAS

Exploration areas will work on a revolving "credit" system of 15 acres. This system will work in a manner that ensures that no more than 15 acres of land is disturbed at any one time for exploration purposes. As described earlier under the Description of Proposed Operations section, it is estimated that 8 of the 15 acres of exploration land will be roads built into and through the exploration area, 5 acres will be drill pads, and approximately 2 acres of disturbed land will be for test pits and trenches. Prior to opening up a new area for exploration, the previously explored area would be reclaimed.

3.10.1 Removal of Equipment and Buildings

Any equipment or buildings remaining in exploration areas upon completion of final mining activities and initiation of final reclamation will be removed and hauled away.

3.10.2 Regrading/Reshaping

The test pits, drill pads, and trenches will be regraded to blend with the surrounding topography. Any open drill/bore holes will be plugged in accordance with state regulations concerning exploration drill holes.

3.10.3 Topsoil Placement

Soil is not available for placement; however, sufficient fine material is anticipated from the disturbed areas to support revegetation.

3.10.4 Seeding

Exploration areas will be seeded in accordance with BLM's recommended seed mix, application rate, and application method as described in Chapter 3.18, Revegetation.

3.11 ADMINISTRATION OFFICE, PARKING AREA AND STORAGE/LOADING AREA COMPLEX

3.11.1 Removal of Equipment and Buildings

All trailers, buildings, materials, pallets, tanks, tools, and supplies that are no longer needed to support the mining or reclamation activity will be removed from the site. This would include any remaining debris, trash or rubbish, equipment, spare parts and unused oils, lubricants and fuel. The portable toilet will be removed by the supplier. The entrance gate will be removed and sold or disposed of, unless the BLM wants it to remain at the entrance.

Any mined rock remaining in the staging area, although an unlikely event, will be made available for sale to the general public. If any remains unsold, it will be placed into the development rock storage areas or into one of the pits.

3.11.2 Regrading/Reshaping

One side of the horseshoe entrance road will be reclaimed, while the other side will remain open to provide access to the main access road. A one-lane road will be constructed through the (former) Administration/Staging area, in an east-west direction, to tie into the main access road. The reclaimed road layout can be seen in Figure 16, Reclamation Plan Map.

Once these are removed, the site will require minimal regrading effort. The site will be ripped to a depth of at least 6 inches to loosen the soils that were compacted from heavy equipment traffic.

The soils around fuel storage areas will be tested for contamination. If hydrocarbon levels are found to exceed Idaho's acceptable limits, the site will be remediated, either by excavating the contaminated soil, or by another approved method.

3.11.3 Topsoil Placement

The surface rock will be removed and disposed of into Pit 1. Any topsoil found beneath the rock will be used for revegetation.

3.11.4 Seeding

The administration area will be seeded in accordance with BLM's recommended seed mix, application rate, and application method as described in Chapter 3.18, Revegetation.

3.12 EXPLOSIVE STORAGE AREAS

3.12.1 Removal of Equipment and Buildings

All explosives, blasting agents, slurry materials, and other supplies used for blasting purposes that are no longer required to support mining will be removed from the site and hauled away. Any remaining equipment, containers, and other materials will be removed from the site and also hauled away.

3.12.2 Regrading/Reshaping

The safety berms will be regraded and the area will be ripped to a depth of at least 6 inches prior to revegetation. Any plastic liners or concrete material in the area will be buried with a minimum of 1 foot of soil.

3.12.3 Seeding

The explosive storage area will be seeded with the seed mix, application rate and method recommended by the BLM and described in Chapter 3.18, Revegetation.

3.13 FUEL STORAGE AREAS

3.13.1 Removal of Equipment and Buildings

All fuel from the fuel storage areas will be used up during reclamation or removed by the supplier. The storage tanks will be removed from the site and either sold or recycled. Prior to any other reclamation activity, the soil in the vicinity of the storage tanks will be sampled and tested for possible petroleum hydrocarbon contamination. If petroleum hydrocarbon levels are found to exceed Idaho's acceptable limits established by the Department of Environmental Quality (DEQ), the contaminated soils will be excavated and removed or remediated in a manner acceptable to BLM and to the Idaho DEQ.

3.13.2 Regrading/Reshaping

The berms will be regraded and the soil from the berms will be placed over the plastic liner material and/or over concrete, whichever is the case at the time.

3.13.3 Topsoil Placement

The plastic liner material will be ripped, cut or split, folded, and buried in place by regrading the soil from the berms over the plastic liner material. Any concrete foundations or liner material built in the fuel storage area subsequent to this revised APOO will be broken in place and buried, with a minimum of 1 foot of material, by regrading the berms over the concrete.

If possible, any topsoil in the berms will be separated and put aside to place over the surface of the fuel storage area.

3.13.4 Seeding

The fuel storage areas will be seeded with the seed mix, application rate and method recommended by the BLM and described in Chapter 3.18, Revegetation.

3.14 BULK AMMONIUM NITRATE STORAGE AREA

3.14.1 Removal of Equipment and Buildings

Any remaining ammonium nitrate will either be removed by the supplier or will be used as fertilizer during revegetation. The bulk storage tank will be removed from the site. The concrete foundation will be broken in place and buried with a minimum of one foot of material.

3.14.2 Regrading/Reshaping

The berms or other material at the site will be regraded and leveled out to match the surrounding topography.

3.14.3 Topsoil Placement

If insufficient fine material is not recovered from the berms, topsoil, if available, will be placed over the surface of the area to support revegetation.

3.14.4 Seeding

The bulk ammonium nitrate storage area will be seeded with the seed mix, application rate and method recommended by the BLM and described in Chapter 3.18, Revegetation.

3.15 WATER WELL

The water well will be filled in, closed, and abandoned by a licensed well driller. The well driller will abandon the well in compliance with Idaho regulations for well abandonment. All pumps, storage tanks, power sources, and other equipment associated with the well will be removed from the site.

3.16 TOPSOIL STORAGE AREA

All topsoil will be removed from the topsoil storage area and placed around the project area per BLM's recommendations. The ground surface under the former topsoil pile will be regraded to

match the surrounding topography. Some of the topsoil will be kept in the storage area and will be seeded with the seed mix recommended by the BLM.

3.17 REMOVAL OF SUPPORT FACILITIES AND SERVICES

As stated previously, all supplies, equipment, buildings, structures, and other materials will be removed from the site when they are no longer needed to support the mining and reclamation/closure activities. This includes trucks, dozers, excavators, graders, haul trucks, dump trucks, water trucks, blasting equipment, pit trailers, administration trailers, storage trailers, portable toilets, pallets, chipping/splitting tools, and other tools, unused plastic lining material, spill control equipment, office supplies, safety supplies, explosive storage buildings, fuel and chemical storage tanks and totes, storage drums, and any other equipment or building that was brought onto the site for the mining operations.

3.18 REVEGETATION

Not all areas of the mine will be revegetated as part of the reclamation plan. Site stabilization, while enhanced by revegetation, is not dependent on complete successful revegetation. Revegetation will occur on roads, development rock storage piles, explosives storage areas and the administration/staging areas if they are in the area of priority designation as determined by the BLM.

L & W Stone will seed species that meet the BLM's recommended seed mixture and application rate. Species used in the seed mixture will be selected based on the most likelihood for successful establishment of a self-sustaining plant community that is consistent with the post mining land uses. The use of "endemic" species will be used where practicable and meets the overall objective of the reclamation plan.

BLM will provide guidance to prioritize the areas that will receive the available stockpiled topsoil cover. The weed management plan will continue during the reseeding program through the final reclamation process.

The BLM recommended a reseeding mixture that consists of these five species: big sagebrush, bluebunch wheatgrass (Secar cultivar), Indian ricegrass (Nezpar cultivar), sandberg bluegrass, and squirreltail at a purity of 95% and a germination rate of 85%. The seeding rates for two seeding methods, broadcast and drill, are provided in the table below.

SPECIES	Seeding Rate - Broadcast Method (pounds/acre)	Actual Seeds per Square Foot	Seeding Rate - Drill Method (pounds/acre)	Actual Seeds per Square Foot
Big Sagebrush	0.12	5.0	0.25	2.5
Bluebunch Wheatgrass (Secar cultivar)	6.6	22.0	6.0	11.0
Indian Ricegrass (Nezpar cultivar)	0.37	2.0	3.7	1.0
Sandberg Bluegrass	0.18	4.0	0.94	2.0
Squirreltail	0.45	2.0	4.53	1.0

If using the drill method instead, the required mix is 25% of big sagebrush, 55% of bluebunch wheatgrass, 5% of Indian ricegrass, 10% of sandberg bluegrass, and 5% of squirreltail.

Revegetation will occur during early fall to winter. This will provide the optimal moisture content for seed germination in early spring. Seeding outside this window will be approved by BLM prior to initiation.

3.19 POST-CLOSURE MANAGEMENT

It is expected that minimal post closure management will be required for the site. A 3-year monitoring program would provide for a reasonable period to assure that the site has stabilized and vegetation growth has occurred. If at the end of the 3-year period it is determined that the monitoring program needs to be extended, arrangements will be made to accommodate an extended monitoring program at that time.

Monitoring of the site will be completed twice per year (spring and fall) and include inspection for the following items:

- Effectiveness of water management structures
- Stability – no large rills and gullies forming
- Vegetation success and weed control

If the inspection identifies areas where rills and gullies are forming, a review of the water management techniques for that area will be evaluated. Correction will be made to the system and may include construction of berms, diversions or other water management structures. Rills and gullies will be regraded or modified to handle surface water from this area.

Reseeding will only be completed in areas where the probability of successfully re-establishing a self-sustaining plant community is reasonable. BLM will designate the areas to be reseeded with native vegetation. BLM will also the supply the seed type, mix, and application rate that has the highest probability of success. Refer to Section 3.2 above for BLM's recommended seed application type, mix, and rate at the time of this amendment. Changes in the seed mixture and other considerations will be evaluated to increase the probability of success. If after the second seeding there is limited success, and the site exhibits stability and demonstrates effective water

management, then no further seeding will occur. All reseeding will occur during the time period identified above.

3.20 CONCURRENT RECLAMATION

As described, concurrent reclamation will be employed to minimize visual impacts associated with the project. In addition, concurrently reclaiming disturbed lands that are no longer required to support mine operations is important to the overall total disturbance to the project. This limits the amount of land disturbed to that needed to support the mining program.

By providing concurrent reclamation, reclamation liability can be assessed on an annual basis and updated to reflect the successful release of concurrently reclaimed lands from previous years. As with the "revolving" exploration activity, this allows for bonding costs to be controlled and minimized through the life of the project. It also keeps the project current in reclamation that provides a "proven" track record for successful reclamation.

Bonding would be phased to reflect concurrent reclamation and existing and planned mine activities. Annual updates of disturbance acreage will be provided to demonstrate sufficient bond coverage exists.

CHAPTER 4
INTERIM MANAGEMENT

The flagstone market, and possibly weather conditions, will dictate the level of activity that is present at the mine site. L&W Stone anticipates a continuous presence at the site. However, if market conditions, weather or other unforeseen conditions occur that could temporarily suspend operations, the following interim management plan would be employed.

Temporary suspensions could involve short duration weather or other similar conditions that last from several days to six months. Market conditions or other outside influences could cause suspension of operations for periods of time greater than a 6-month period (Long Term Duration, Section 4.2). In the event a suspension of operations occurs for any length of time, L&W Stone will manage the site to minimize potential impacts.

During a suspension of activities of any duration, the name and phone number of the following L&W Stone contact person and alternate will be prominently posted. L&W Stone will contact the BLM, advising of the temporary shutdown.

Gary Bushnell
P.O. Box 789, Challis, ID 83226
(208) 879- 5924

Steve Petersen
P.O. Box 1194, Challis, ID 83226
(208) 879-5208

This plan describes the interim management plan for short term and long term shut downs.

4.1 SHORT TERM DURATION

When a temporary shutdown occurs that is less than 6 months, the operation will be managed consistent with the operational mode. Periodic inspections of the site will occur to ensure that the Best Management Practices (BMPs), previously specified in this Plan, are working properly. It is expected that access to the entire site can be accomplished. However, if snow or other weather conditions restrict access to the site, inspections will be carried out where possible. A log of the inspections will be maintained and any repair work necessary to remediate will be carried out.

Mining operations are conducted continuously, but splitting and packaging activities shut down during the winter months. A monitoring inspection will be conducted in the spring, regardless of whether mining operations start up again.

4.2 LONG TERM DURATION

If a shut down that extends beyond 6 months is planned, L&W Stone will consider some modified level of site staffing. It is expected that certain actions may be necessary to mitigate potential issues at the site caused by lowered staffing levels and inspections.

L & W Stone will likely continue the level of inspection proposed for Short Term Duration suspended operations until it becomes apparent that the condition, which caused the suspension, will persist. At that point, L & W Stone would take the necessary actions to allow a smaller management effort to be employed during this period.

Monitoring will be completed on an annual schedule. Inspections will be completed in late spring and after a catastrophic event such as an earthquake or a significant rain or snowfall. In that case, an inspection will be conducted as soon as possible after the event. If remedial action is necessary to correct a site condition, L&W Stone will initiate appropriate measures to address

the issue. It is expected that corrective actions would take place within a week, depending on the weather and other site conditions at the time.

A long term duration shut down may require that certain equipment, fuels, supplies and other items are removed from the site. Some level of care and maintenance will be required for this site and will be dependent on the site conditions at the time. If a significant change in management practices is planned, L & W Stone will provide the BLM with a revised plan prior to implementation.

Concurrent reclamation is continually implemented on this site whenever project activities are completed in a certain area. This practice would be continued prior to a shutdown of any duration. Interim reclamation would be implemented only if erosion or other damaging effects are noted to be occurring during the short term shutdown. Regrading and/or reseeding would be implemented with some guidance provided from BLM.

Documentation will be maintained for inspections and any other actions taken during the temporary closure.

The final reclamation plan will be initiated when a temporary shutdown extends for three years.

REFERENCES

Barfield, B. J., R. C. Warner, and C. T. Haan (1981). Applied Hydrology and Sedimentology for Disturbed Areas. Oklahoma Technical Press

Brashear, Stuart (2002). Blast Vibration Prediction Calculations and Comparisons for the L & W Stone Company, Dynoconsult, a division of Dyno Nobel North America

Bureau of Land Management, (1999). Record of Decision and Challis Resource Management Plan

Bureau of Land Management (2002) Letter to L&W Stone, dated October 23, 2002

Bureau of Land Management, (2002). Revegetation recommendations in an email to Earthworks Technology, Inc.

Fisher, Frederick S. and Kathleen M. Johnson, Eds. (1995). Geology and Mineral Resource Assessment of the 1° x 2° Quadrangle, Idaho. U.S. Geological Survey Professional Paper #1525

Idaho Department of Environmental Quality's Catalog of Stormwater Best Management Practices at www.deq.state.id.us/water/stormwater_catalog

Idaho Department of Lands, (1992). Manual of Best Management Practices

Idaho Geological Survey website (www.idahogeology.org)

National Cooperative Soil Survey and Iowa State University website
www.statlab.iastate.edu/soils

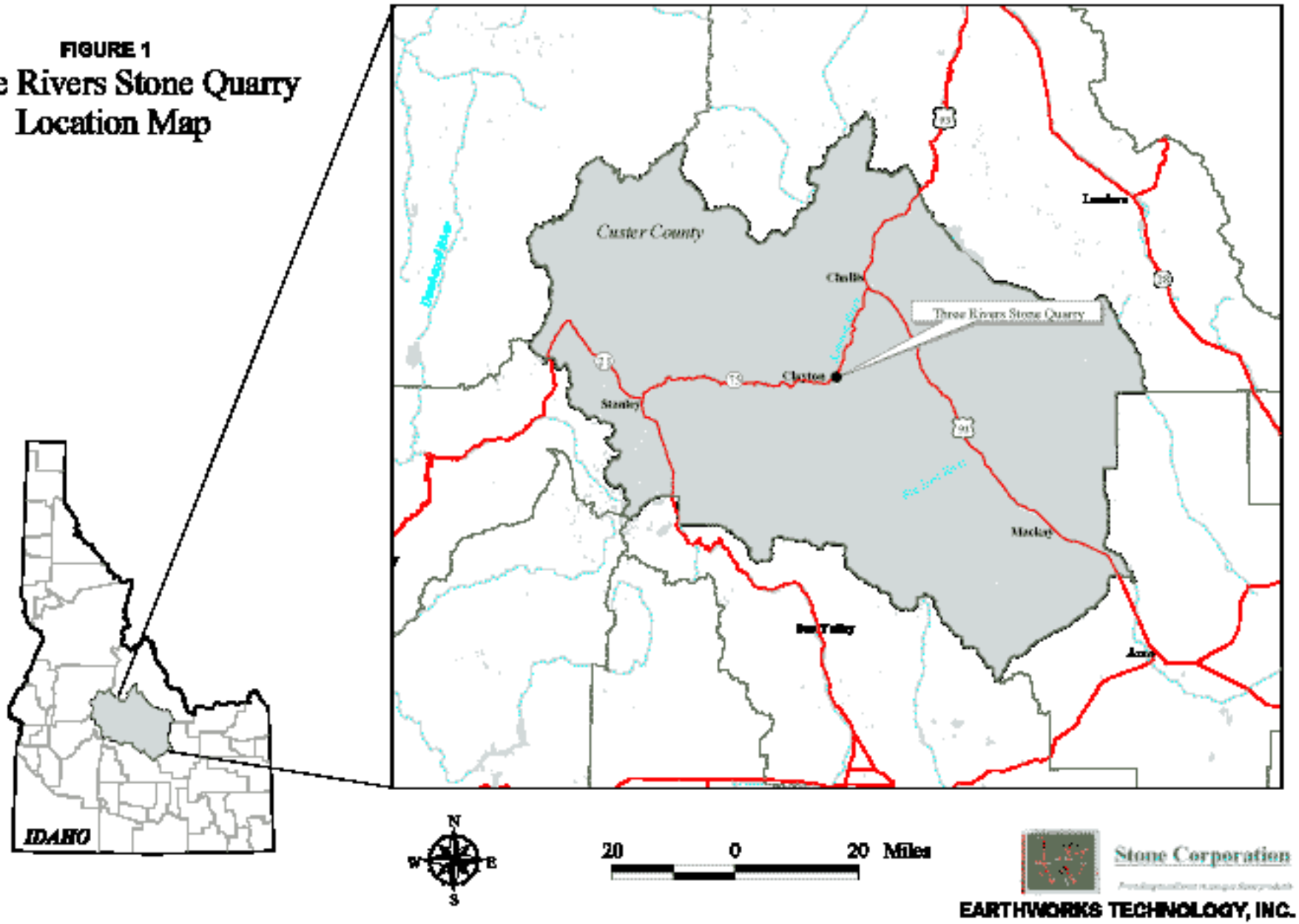
Ross, Clyde P. (1937). Geology and Ore Deposits of the Bayhorse Region, Custer County, Idaho. U.S. Geological Survey Bulletin No. 877

Western Region Climate Center website (www.wrcc.dri.edu/cgi-bin/)

United States Geological Survey website (www.waterdata.usgs.gov/id/nwis/)

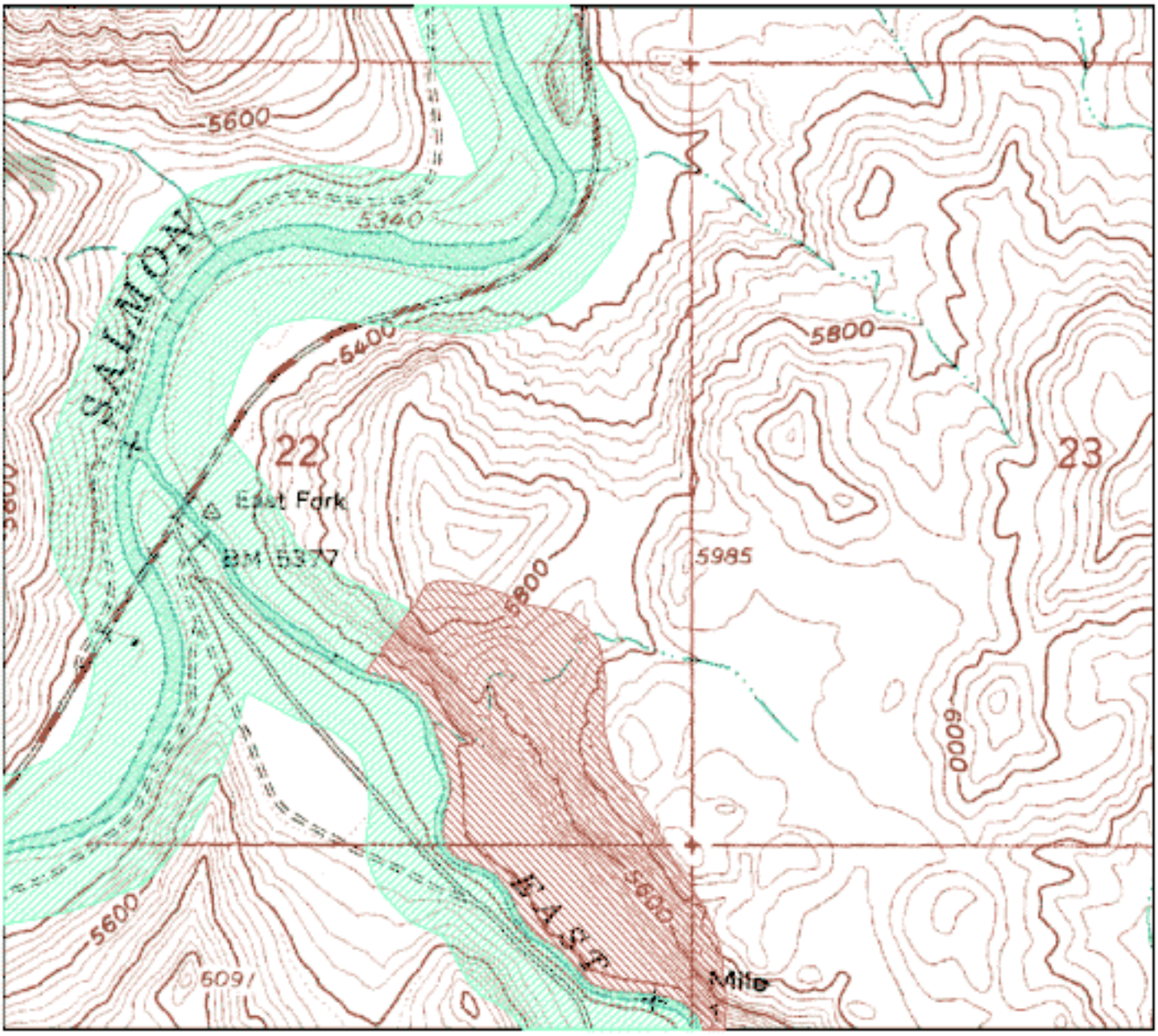
FIGURE 1

Three Rivers Stone Quarry Location Map



Stone Corporation

EARTHWORKS TECHNOLOGY, INC.



AREA WITH CLASS 2 VISUAL RESOURCES - ENTIRE AREA

EAST FORK SALMON RIVER BENCH RNA/ACEC

WILD & SCENIC RIVER POTENTIAL - ELIGIBLE; SUITABILITY DEFERRED; TENTATIVE CLASSIFICATION: RECREATIONAL

FIGURE 3

EARTHWORKS TECHNOLOGY, INC. 409 W. NEIDER ST., SUITE A COEUR D'ALENE, IDAHO 83815	DATE: December 2002
	SCALE: AS SHOWN
	DRAWN: JASPER GEOGRAPHICS

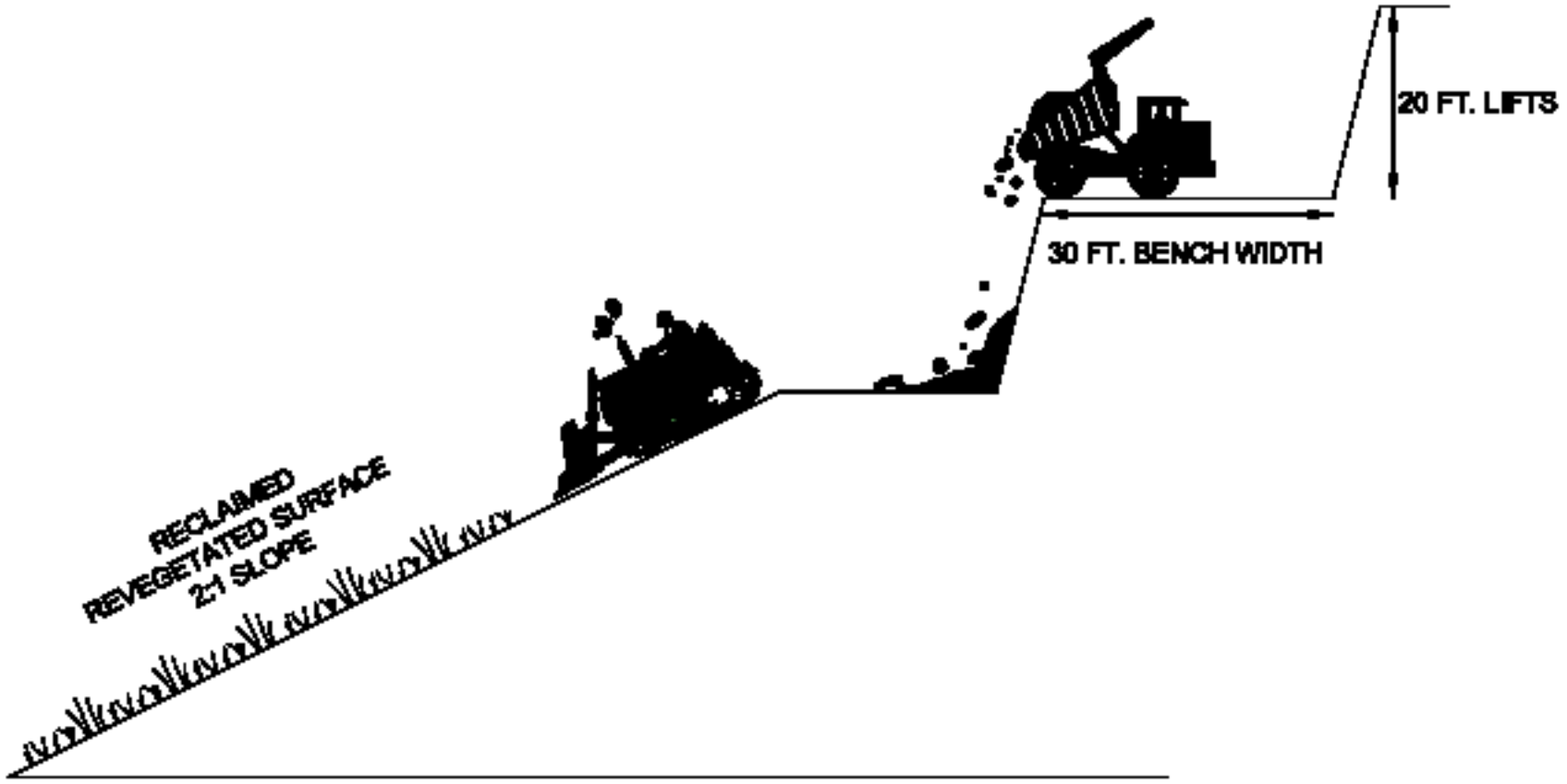
LOCATION: SECTIONS 22 & 23, T.11N., R.18E., CUSTER COUNTY, IDAHO

LSW STONE CORPORATION

AREAS OF REGULATORY CONCERN

THREE RIVERS STONE QUARRY, CHALLIS, IDAHO

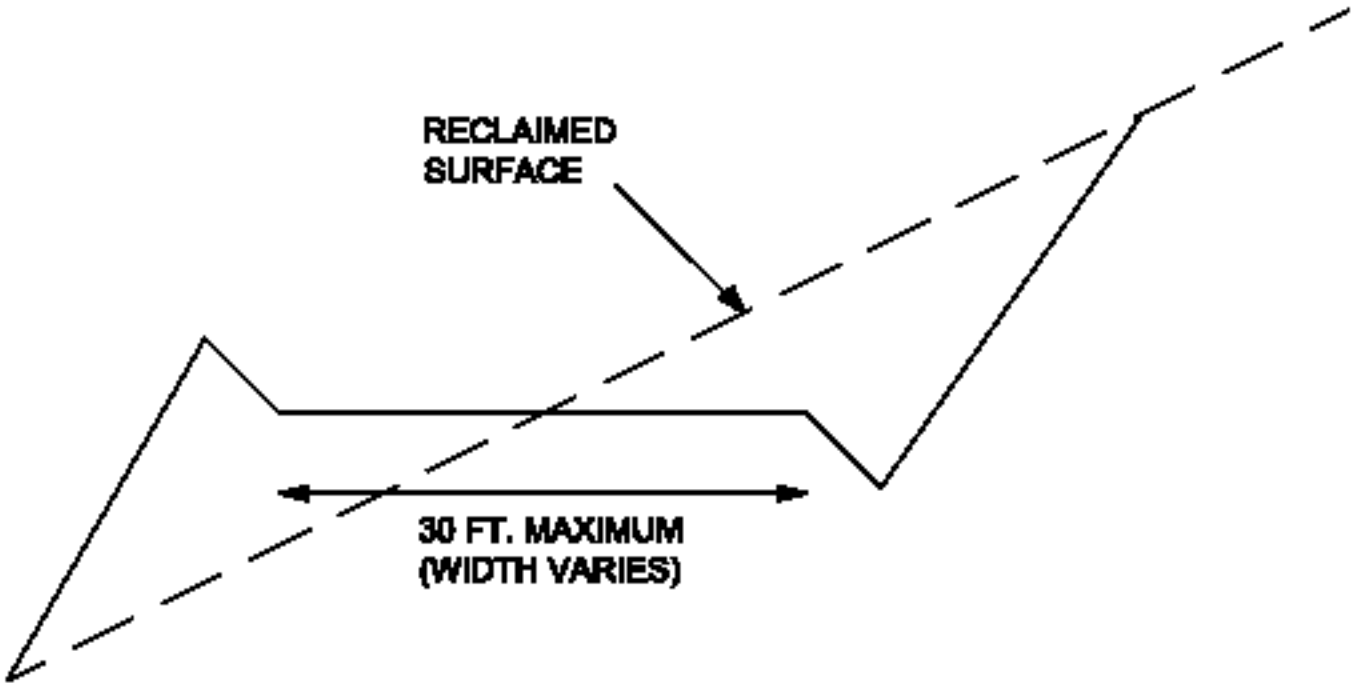
TYPICAL CROSS-SECTION OF DEVELOPMENT ROCK SLOPE



NOT TO SCALE

FIGURE 4		
EARTHWORKS TECHNOLOGY, INC. 409 W. NEIDER ST. SUITE A COEUR D'ALENE, IDAHO 83815	DATE:	December 2002
	SCALE:	AS SHOWN
	DRAWN:	JASPER GEOGRAPHICS
LOCATION: SECTIONS 22 & 23, T.11N., R.18E., CUSTER COUNTY, IDAHO		
TYPICAL CONCURRENT RECLAMATION SEQUENCE OF DEVELOPMENT ROCK STORAGE AREAS THREE RIVERS STONE QUARRY, CHALLIS, IDAHO		

TYPICAL ROAD CROSS-SECTION



NOT TO SCALE

FIGURE 5		
EARTHWORKS TECHNOLOGY, INC. 409 W. NEIDER ST. SUITE A COEUR D'ALENE, IDAHO 83815	DATE:	December 2002
	SCALE:	AS SHOWN
	DRAWN:	JASPER GEOGRAPHICS
LOCATION: SECTIONS 22 & 23, T.11N., R.18E., CUSTER COUNTY, IDAHO		
CONCEPTUAL RECLAMATION TYPICAL ROAD CROSS-SECTION THREE RIVERS STONE QUARRY, CHALLIS, IDAHO		

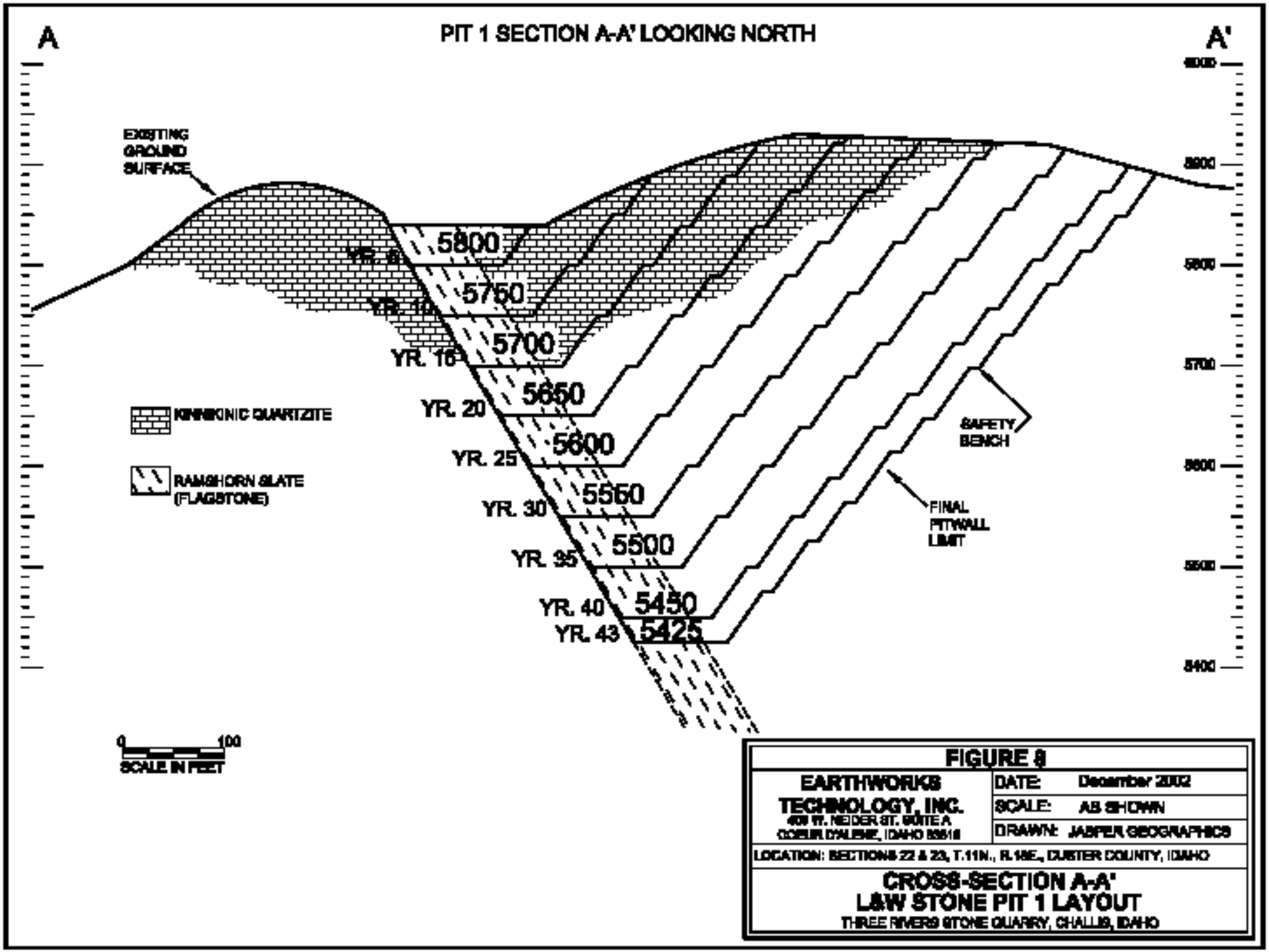
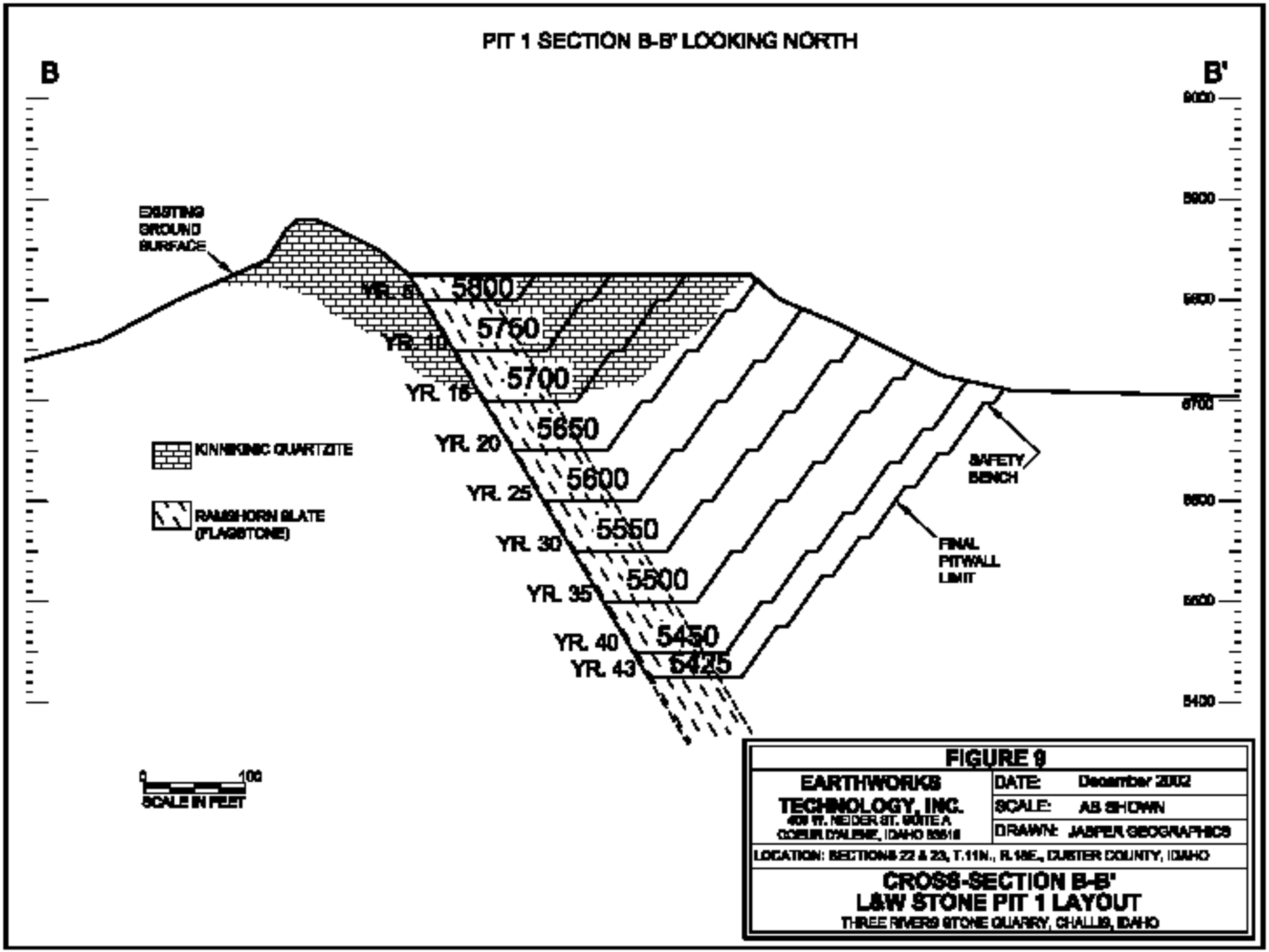


FIGURE 8		
EARTHWORKS TECHNOLOGY, INC. 409 W. NEIDER ST. SUITE A COEUR D'ALENE, IDAHO 83815	DATE:	December 2002
	SCALE:	AS SHOWN
	DRAWN:	JASPER GEOGRAPHICS
LOCATION: SECTIONS 22 & 23, T.11N., R.18E., CUSTER COUNTY, IDAHO		

CROSS-SECTION A-A'
L&W STONE PIT 1 LAYOUT
THREE RIVERS STONE QUARRY, CHALLIS, IDAHO


PIT 1 SECTION B-B' LOOKING NORTH
B
B'
EXISTING GROUND SURFACE
YR. 0
5800
YR. 10
5760
YR. 15
5700
YR. 20
5650
YR. 25
5600
YR. 30
5550
YR. 35
5500
YR. 40
5450
YR. 43
5425
KINNIKINIC QUARTZITE
RAMSHORN SLATE (FLAGSTONE)
SAFETY BENCH
FINAL PITWALL LIMIT
6000
5900
5800
5700
5600
5500
5400
0
100
SCALE IN FEET
FIGURE 9
EARTHWORKS TECHNOLOGY, INC.
409 W. NEIDER ST. SUITE A
COEUR D'ALENE, IDAHO 83815
DATE: December 2002
SCALE: AS SHOWN
DRAWN: JASPER GEOGRAPHICS
LOCATION: SECTIONS 22 & 23, T.11N., R.18E., CUSTER COUNTY, IDAHO
CROSS-SECTION B-B'
L&W STONE PIT 1 LAYOUT
THREE RIVERS STONE QUARRY, CHALLIS, IDAHO

PIT 2 SECTION C-C' N55°E LOOKING N35°W

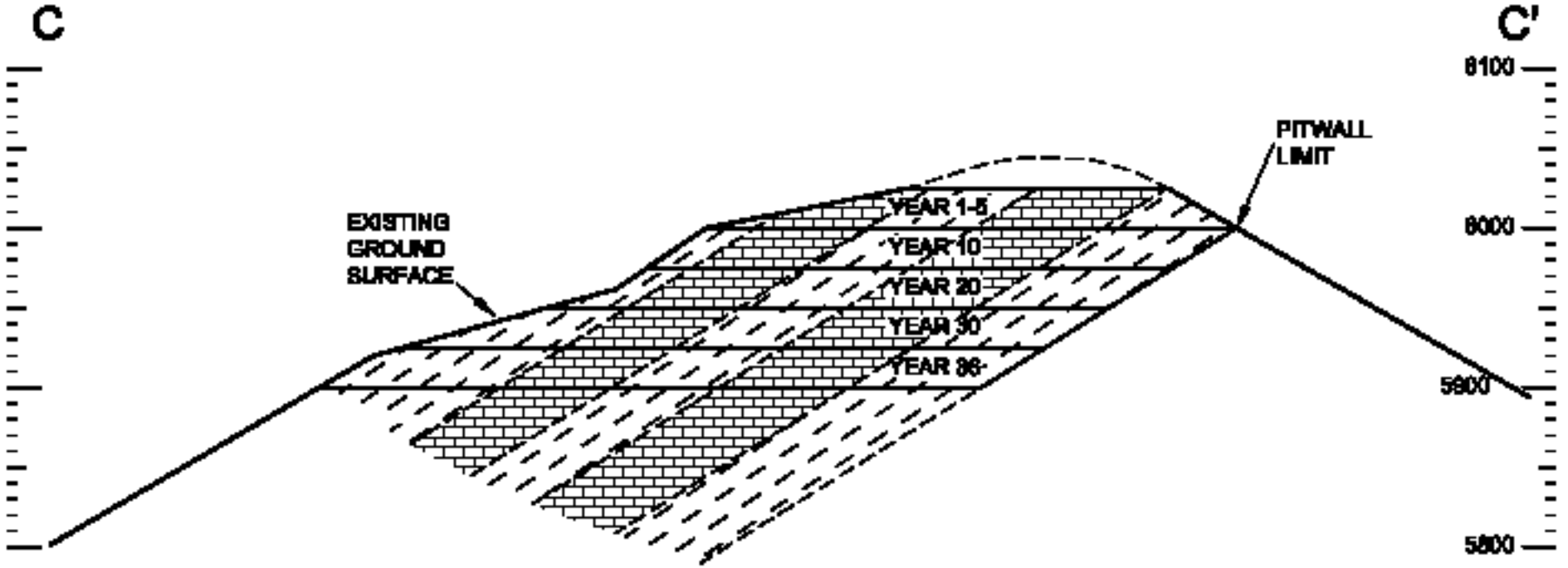


FIGURE 10		
EARTHWORKS TECHNOLOGY, INC. 409 W. NEIDER ST. SUITE A COEUR D'ALENE, IDAHO 83815	DATE:	December 2002
	SCALE:	AS SHOWN
	DRAWN:	JASPER GEOGRAPHICS
LOCATION: SECTIONS 22 & 23, T.11N., R.18E., CUSTER COUNTY, IDAHO		
CROSS-SECTION C-C' L&W STONE PIT 2 LAYOUT THREE RIVERS STONE QUARRY, CHALLIS, IDAHO		

PIT 1 DEVELOPMENT ROCK STORAGE AREA
LOOKING NORTHEAST

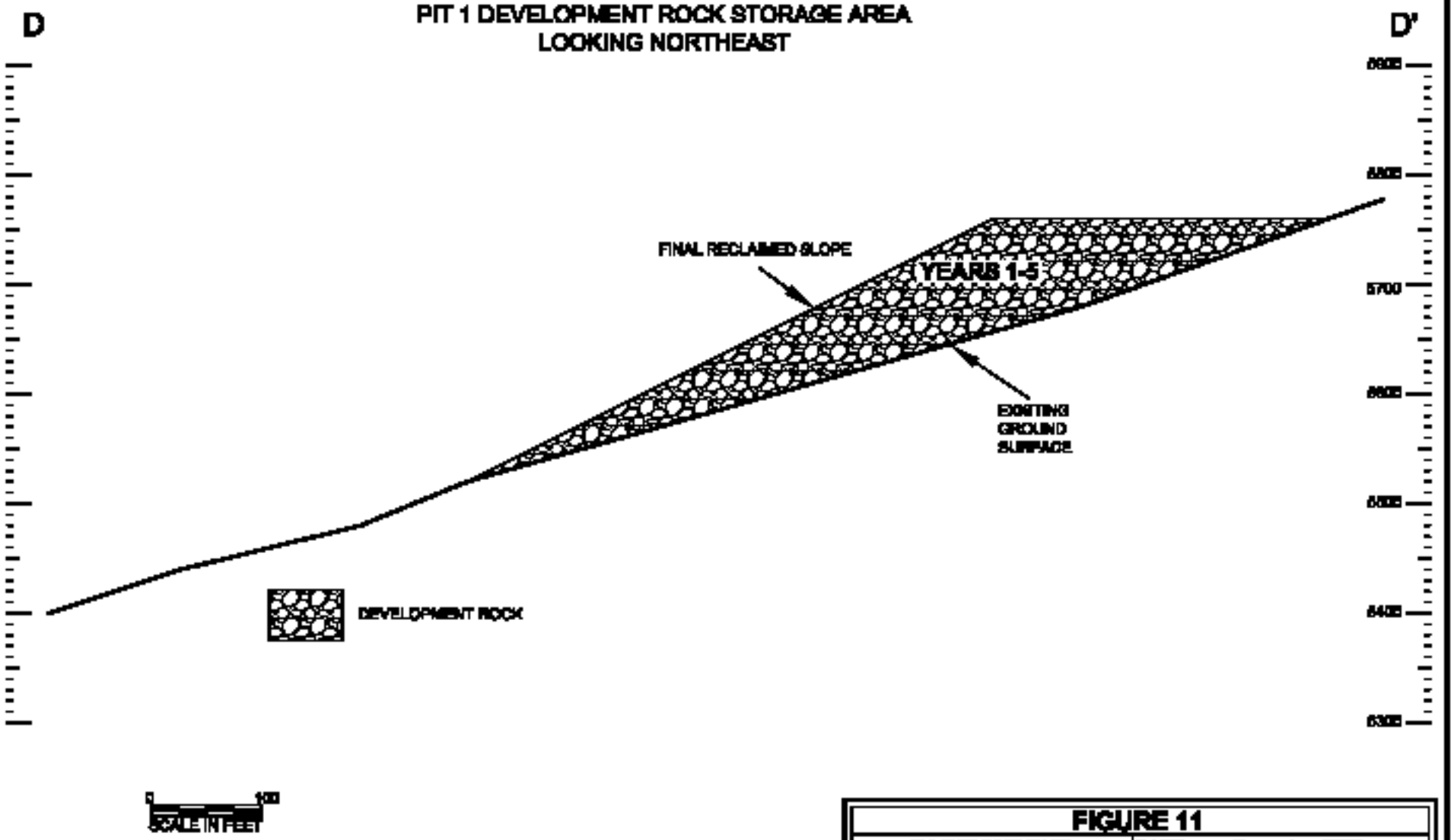


FIGURE 11		
EARTHWORKS TECHNOLOGY, INC. 409 W. NEIDER ST. SUITE A COEUR D'ALENE, IDAHO 83815	DATE:	December 2002
	SCALE:	AS SHOWN
	DRAWN:	JASPER GEOGRAPHICS
LOCATION: SECTIONS 22 & 23, T.11N., R.18E., CUSTER COUNTY, IDAHO		

RECLAIMED CROSS-SECTION D-D'
P-1 DEVELOPMENT ROCK STORAGE AREA
THREE RIVERS STONE QUARRY, CHALLIS, IDAHO

P-2 DEVELOPMENT ROCK STORAGE AREA
LOOKING WEST

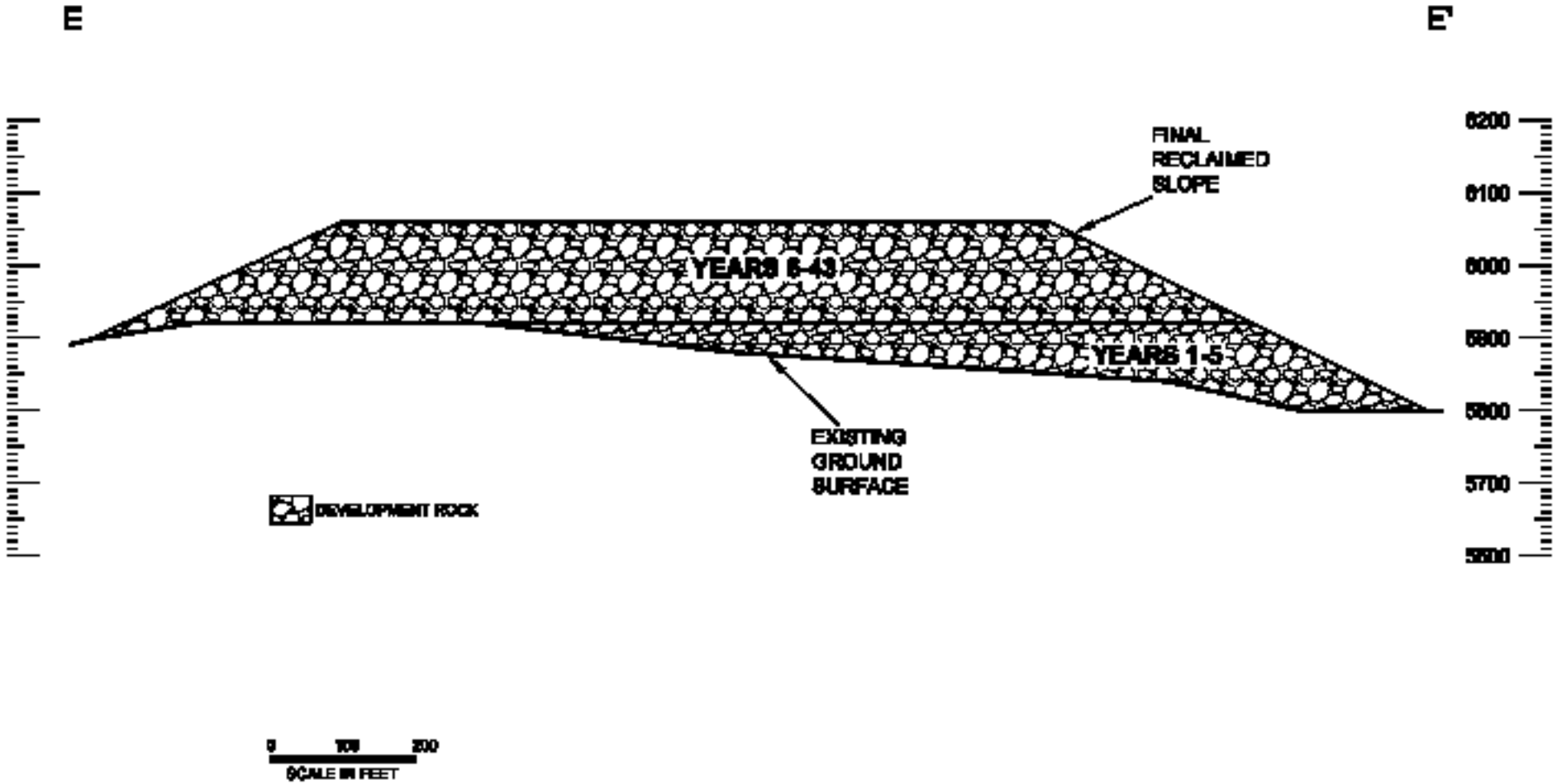


FIGURE 12		
EARTHWORKS TECHNOLOGY, INC. 409 W. NEIDER ST. SUITE A COEUR D'ALENE, IDAHO 83815	DATE:	December 2002
	SCALE:	AS SHOWN
	DRAWN:	JASPER GEOGRAPHICS
LOCATION: SECTIONS 22 & 23, T.11N., R.18E., CUSTER COUNTY, IDAHO		

RECLAIMED CROSS-SECTION E-E'
P-2 DEVELOPMENT ROCK STORAGE AREA
THREE RIVERS STONE QUARRY, CHALLIS, IDAHO

P-2 DEVELOPMENT ROCK STORAGE AREA
LOOKING NORTH

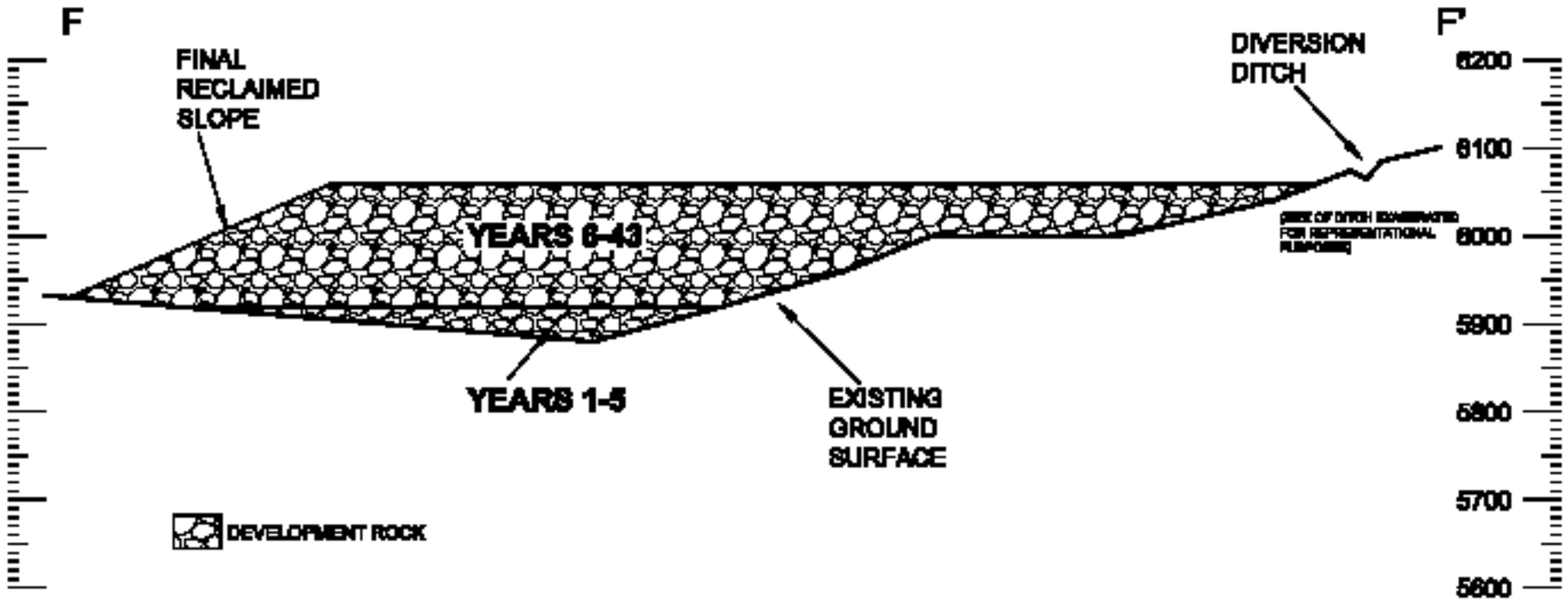


FIGURE 13		
EARTHWORKS TECHNOLOGY, INC. 409 W. NEIDER ST. SUITE A COEUR D'ALENE, IDAHO 83815	DATE:	December 2002
	SCALE:	AS SHOWN
	DRAWN:	JASPER GEOGRAPHICS
LOCATION: SECTIONS 22 & 23, T.11N., R.18E., CUSTER COUNTY, IDAHO		

RECLAIMED CROSS-SECTION F-F'
P-2 DEVELOPMENT ROCK STORAGE AREA
THREE RIVERS STONE QUARRY, CHALLIS, IDAHO

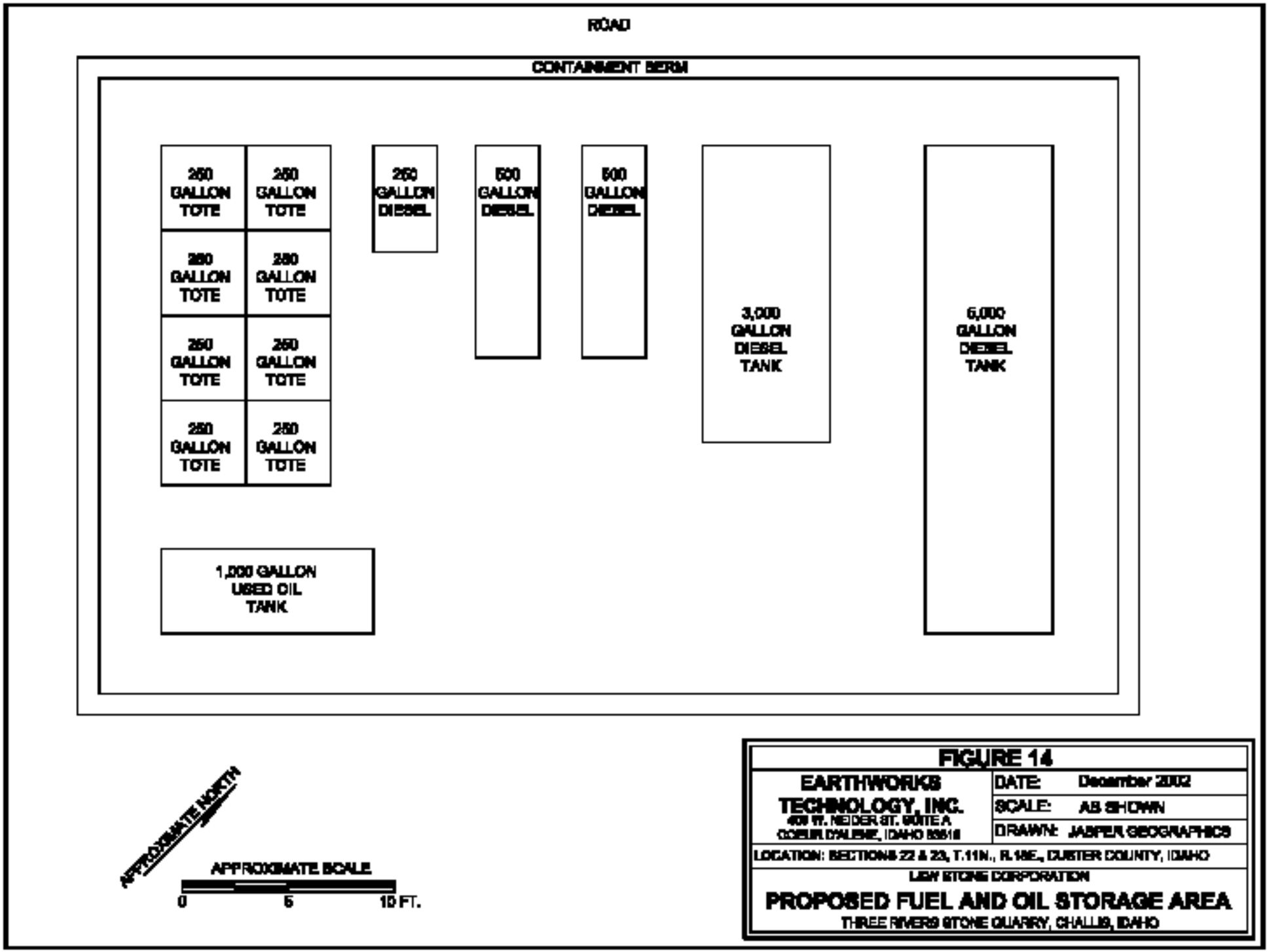


FIGURE 14

EARTHWORKS TECHNOLOGY, INC. 409 W. NEIDER ST. SUITE A COEUR D'ALENE, IDAHO 83815	DATE: December 2002
	SCALE: AS SHOWN
	DRAWN: JASPER GEOGRAPHICS

LOCATION: SECTIONS 22 & 23, T.11N., R.18E., CUSTER COUNTY, IDAHO

LEAV STONE CORPORATION

PROPOSED FUEL AND OIL STORAGE AREA

THREE RIVERS STONE QUARRY, CHALLIS, IDAHO